GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

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STRAY STRAWS FROM DR. C. C. MILLER.

SWEET CLOVER showed first bloom June 18.

TRY SWEET CLOVER, friend Root, in that hard clay where you can't get a catch of clover.

HONEY SALES by county associations with trade-mark labels is under discussion in England.

A DELIGHTFUL VISIT from *A. B. J.* York, bringing with him a big rain to break the long drouth, made us all happy.

HARPER'S MONTHLY is an ally to bee-keepers. See "The Welcomes of the Flowers," in March number.

CURE FOR BURNS. Dissolve 1 lb. epsom salts in 2 qts. water, and hold the burn in it, or bathe with it.—*Med. and Surg. Jour.*

I'M WITH N. D. West (p. 503) in wanting plenty of room to get out the first frame, and with the editor in wanting nothing screwed or wedged tight.

CLOVER should not be cut for seed, says Carl Zelenka, in *Bienen-Vater*, unless weather was favorable at blooming time for bees to fly. Otherwise the yield of seed will not pay.

GRAVENHORST mentions a colony that did not swarm for 29 years, renewing its queens according to its own notion, and giving a larger yield than any of its neighbors. I'd like that strain of bees.

OLD HIVES, to be used again for swarms, should be well scrubbed with strongest salt water, says Dr. Hachenberg, in *A. B. J.* He thinks he has thus stopped the troublesome desertion of swarms.

THE HARDEST LESSON, perhaps, that beginners have to learn is, that *number* of colonies doesn't count as much as *strength*. It takes backbone for a beginner with 6 colonies to bring them down to 5 by uniting a weakling with a stronger one. Yet the 5 stronger colonies will sooner increase to 100 than the original 6.

EXCLUDERS are made by Robert Nitzsche, Sebnitz, in Saxony, of hardened pasteboard, proof against moisture, gnawing, and warping. Gravenhorst commends them. Strips 4 inches wide at 5 cts. per running foot.

QUEEN-EXCLUDERS of wire are made across the water. The claim is, that the bees like them better than the common kind, because they have no sharp edges. [Don't see how they can be accurate excluders.—ED.]

"WE FORMERLY used two boxes (or crates) of shallow frames as a brood-chamber, and, after exhaustive trials extending over 12 or 15 years, we gave up the idea, though it was our pet notion at the time."—*Editor B. B. J.*

WHAT WITH fewer frames, closer spacing, and deeper top-bars, the present Langstroth, or Dovetail, has now a capacity inside frames of 1540 cubic inches. My first Langstroths, 10-frame, had 43 per cent greater capacity, or 2200 cubic inches.

STUBBORN. I put the queen of 57 over an excluder in an upper story where the bees were storing honey. She didn't lay for about 48 hours. At the end of a week, not an egg was hatched, when I succumbed and took away the excluder. No queen-cells were started.

VERY STUBBORN. May 17 I put the queen of a strong colony, No. 76, over an excluder in a second story. Forgot about it till I opened the hive June 14 and found not an egg or brood of any kind in either story, and the queen digging for dear life to get down through that excluder. Queer.

THAT PICTURE on p. 517 is fine; but isn't it just an excuse for A. I. to show up his windmill? [He didn't know it was going to be "took in" when he asked E. R. to photograph the boys. Nevertheless, he seemed pleased that the picture "took in" so much, especially that rye.—ED.]

FOUL-BROOD CURE. MR. Carl Schroeter, in *Deutsche Imker*, reports entire success with carbolic acid. As generally used, it is a failure, being too weak if diluted, and driving the bees out if full strength. He uses full strength, a

tablespoonful mixed with as much tar, put under the frames in a little box, open enough to allow evaporation, but bee-tight. That's the whole cure, renewed every three months.

RAMBLER goes just a little too far on p. 505, when he claims that "a card properly adjusted around the neck" will keep bees out of a veil. I suppose he has "keep out" written on the card, and wants us to think the bees can read it. I don't believe a word of it. [An error—it should read *cord*.—ED.]

THE *American Bee-keeper* is hard down on the use of "friend" and "brother" among bee-keepers. Thinks it indicates too close familiarity. Isn't it just as familiar to call a man "dear" sir? It says the terms are never seen in the journals elsewhere. You're out there. Read the German bee-journals.

THE *British Bee Journal* says that a clipped queen, when its colony swarms, "being unable to fly, drops to the ground, where, if discovered, she is joined by the bees of the swarm." Of the hundreds of cases I have had, I never knew a swarm to join a queen on the ground. Aren't you theorizing, respected *B. B. J.*?

THE FOUNDATION in my sections, according to *B. B. J.*, is all hung the wrong way. In the picture, the *B. B. J.* seems right, but the wrong way works all right with me. Wonder if there's a kink in the theory. [Wonder if *actual tests* would show any preference in favor of having the foundation hung one way instead of the other. We never *noticed* that the wax behaved better one way than the other.—ED.]

THE BRILLIANT PROSPECT of the middle of May had a bad setback. Cold set in, and drouth, and up to June 12 starving and dragging out brood was only too common. To crown all, scarcely any clover bloom was in sight. June 16 came a grand rain, and June 20 clover is blooming, and the bees are having a picnic. [Glad your bees are having a picnic on clover. We haven't any white clover here this season, to speak of.—ED.]

S. T. PETTIT finds blisters of water under the paint of hives containing bees. That's one way I "*know* moisture will go through unpainted hive-sides" (p. 492). Look here; don't *you* know that water will soak into and through an unpainted pine board? [It will soak in to a certain extent; but will it pass through? If we accept your idea, we surely want paint because the moisture from *without*, together with a baking sun, is what ruins—i. e., checks and rots boards. Moisture from *within* is a small item. Now, then, do you *know* that bees in unpainted hives winter better than in those painted?—ED.]

"HONESTLY, I wish that there were some way of cleaning one's fingers of honey, so clean that they would not be sticky, without the trouble of going to the honey-house and washing them."—*Hutchinson*. Try my way, W. Z. Wash them with dirt. Clean soil is ever so much better than stickiness. [The idea of washing hands in *dirt* to clean 'em! Well, it is a good one, and, come to think of it, we have practiced it ourselves. It removes the unpleasant sticky feeling entirely. We have often, in a similar way, cleaned grease off our hands in sawdust. When we were working among the bees every day we kept a pail of water handy; and whenever we passed that pail in the height of the honey season we gave those sticky hands a souse. Perhaps a pail of sawdust smoker-fuel might be used for a double purpose—washing hands and filling the smoker.—ED.]

MORE ABOUT INHERITANCE.

By E. T. Abbott.

I presume I shall not be misunderstood if I venture to offer a few suggestions on this subject, and show where I can not agree with the article written by my good friend Dr. Miller. I am impelled to join issue with some of his conclusions, as I think they are founded on false premises. A brief review of a few of his statements will bring out clearly what I mean.

Dr. M. talks of "inherited characteristics." Now, I do not think of characteristics as being inherited. Character is something taken on from without, and is always post-natal. Inheritance is the result of forces operating from within, and is always pre-natal. Or, to put it in another form, character is made; inheritance is inbred. However, his expression may be admissible.

In speaking of the calf, Dr. M. says, "The germ, when implanted in the womb of that mother, had no tendency to white." It seems to me it had no other tendency, so far as the mother's influence on color extended. As will be apparent further on, Dr. M. seems to hold that the germ comes from without; when the truth of the matter is, it is the product of forces working within. *Omne vivum ex ovo*, "every animal is produced from an egg," is the law of birth laid down by Harvey, and, as I think, fully demonstrated by Agassiz. "All animals," says he, "without exception, high or low, of whatever ultimate complexity or simplicity of structure, originate from eggs, and from eggs of the same character."

It follows, then, that whatever predisposition that calf was to receive or inherit from its mother was in the egg the moment it was formed, and this was very early in the life of the mother; for Agassiz has shown that eggs are sometimes formed in the womb of the anima

that is yet unborn, just as a perfect plant may be found and seen with the naked eye in the seed of the morning-glory before it is fully matured and hardened. These are his words: "Ovarian eggs may be found in animals before they have reached maturity; before they have completed their physical growth—nay, ovarian eggs have even been observed in the embryo before birth."

It will be necessary, then, to look beyond what is known as the act of generation for whatever inherited tendencies are to come from the mother. To quote again from our illustrious scientist, "Successive generations do not begin with the birth of new individuals, but with the formation of the egg from which these individuals proceed. We must look, then, upon the egg as the starting-point of the complicated structure of the adult being. It is, as it were, a sieve through which the qualities transmitted by parents to their offspring are sifted." Whatever peculiarity there may be in the new being has its foundation in the egg. Within these narrow limits are circumscribed all the conditions of change.

"The egg arises in the maternal organism without the co-operation of the other sex."

Dr. M. says, "The same germ (egg) planted in the womb of a red mother might have produced a red calf." Of course, this is a fallacy; for germs can not be "planted" in this way; but if they could, the red mother would not be able to influence the color of the calf in the least. It had already received from a white mother all the maternal bias as to color it could ever receive, when the germ was formed in the egg. It might be affected in its characteristics, or that which comes from without, by its red mother; but the inherited tendencies, or that which comes from within, had been unalterably fixed by a white mother. Of course, these might be modified by the act of generation, or the union of the male sperm with the female cell, as I shall have occasion to show further on.

To quote again from Dr. Miller: "So it seems pretty clear that the calf received inherited traits by means of the food (mark this) it received before the time it came forth as a perfect calf." Clear to whom? It seems pretty clear to me that it did not do any thing of the kind, as is no doubt apparent from what I have said above. Then Dr. M. changes his illustration, and says of a hen's egg, "When the egg was laid, if I am not mistaken, the germ was there with no characteristics except those received from the sire." Doctor, I am very much inclined to think you are seriously "mistaken," or, to speak more correctly, you have made a serious mistake, and founded your entire argument on a false basis. What about the egg of a queen that never "knew a male" bee? What kind of "characteristics," inherited tendencies, are there in that egg, and where did they come from?

Hear Agassiz again: "I can not dwell too emphatically upon the fact that the eggs are produced, and grow without any agency of the male animal." Again, Dr. M. engages in the transfer business, and thinks of this germ as being transferred to a "speckled hen," and says in that case it might have produced a speckled chicken. I can understand how he reached this conclusion, for he says, in the next sentence, "If I am correct in this, then the traits of the mother were received by the germ during the time of incubation through the nourishment contained in the egg."

The truth of the matter would seem to be that neither calf nor chicken received any "inherited traits" from the "food it consumed." Unless I misunderstand all the facts connected with the law of inheritance, traits are not transmitted in that way. You might just as well say that a potato-germ receives traits from the starch, etc., stored up in the potato. But how is it when you cut the germ out and plant it alone in the soil? Do the traits of inheritance then come from the soil? If so, how would it be if the germ were cut in four parts, as Terry says it may be, and each part were planted in a different kind of soil? Should we have four different kinds of potatoes? I think not. The truth is, the formative power is in the germ the moment it forms in the egg of the female or the sperm of the male; and if the animal is the product of the union of two such cells, sperm and germ, as most animals are, then whatever inherited tendencies as to physical organism, such as color, etc, the new-born animal may receive from mother or father were latent in these germs the moment they were formed, and no after-influence of nourishment will make one hair or feather white or black. The food or nutriment does not mold the organism, but the latent inherent polarity of the organism assimilates, molds, and directs the nutriment. Spencer says the physiological units mold the nutriment into their own type. I would say the psychological formative power takes up the nutriment and gives it form after the type of the individuals from which the cells originated.

Spencer puts it this way: "The form of each species of organism is determined by a peculiarity in the constitution of its units." "The living particles composing one of these fragments have an innate tendency to arrange themselves into the shape of the organism to which they belong." "Organic polarity" is the name he gives to this power. He then goes on to show that the power does not rest in what he calls the "*chemical units;*" neither can it rest in what he calls the *morphological units*, namely, the cells; but we must conceive it as possessed by certain intermediate units which he terms "*physiological.*" Why not cut the Gordian knot by calling this a *psychological* unit, or somewhat as I have above?

It seems to me an incontrovertible fact that

individualism, or the power to individualize, can not be explained from the standpoint of any thing but spirit, or a psychological unit. It is this that makes a plant a plant, a tree a tree, a horse a horse, and a man a man, and gives to each its various peculiarities. He who looks in any other direction for an explanation of the phenomena of the universe is sure to meet with final disappointment.

I admit that food and surroundings may have much to do with temperament, with shaping the acquired habits of animals and men. You take a child born of white parents, intelligent and refined, and place it in the arms of an ignorant negro nurse, and let it see no one else until it reaches manhood or womanhood, and it will talk and act in many respects like a negro, notwithstanding its inherited tendencies.

There is, however, a wide difference between acquired habits and inherited tendencies. One of them, as I have shown, is latent in the cells from which the organism springs, and the other impresses itself on the completed organism through its various susceptibilities; or, to put it differently, one is the outgrowth of environment, and the other of cell-formation.

That queens may not imbibe bad traits from their environment, I am not prepared to say; but this has nothing to do with bringing out qualities latent in the germ or sperm cell. However, as all variations tend to become hereditary, that which is imbibed in one generation may become innate and permanent in remote future generations.

Dr. M. seems to hold that the act of generation produces the germ, or, in other words, that the germ is furnished by the male. I do not so understand it, and can not see how Dr. M. can hold such a theory, knowing what he does about the economy of a bee-hive. I know this is an old theory. Agassiz says, "At one time physiologists did not doubt that the spermatic particles were actually the beginning of the new germ." But I can not see how any one acquainted with the theory of parthogenesis and the process of germ-development can entertain such an idea. Darwin says, "The belief that it is the function of the spermatozoa to communicate life to the ovule seems a strange one, seeing that the unimpregnated ovule is already alive, and generally undergoes a certain amount of independent development." Some very learned men hold, or have held, that "the life principle is in the sperm-cell;" but I think modern science has demonstrated that it is not any more than it is in the germ-cell.

After all, is not this theory the culmination of male egotism, which all down the ages has relegated the female to an inferior place? I am glad to say that the ant and the bee have placed the seal of falsehood on this relic of barbarism. The male has nothing to do with the formation of the germ, and in many cases nothing to do with its perfect development. Where the animal is the product of the union of two cells (and most animals are, as I remarked before), the union of the sperm-cell with the germ-cell imparts to it a certain *vis evolvendi*, power of development; but the germ was there with all its possibilities and maternal inherited tendencies before the union took place. As both cells enter into the composition of the new organism, it will be more or less influenced by each of them, varying according to the pre-potency of the cells. Spencer finds the necessity for this union in the fact that they had reached a state of equilibrium, whatever that may mean, and the union breaks it up and growth begins. Darwin suggests that the union is made necessary because the cells possess too little formative matter for independent development.

These will do for working explanations; but I apprehend there is a reason lying back of all of these theories, which we do not fully understand.

St. Joseph, Mo.

WHY FLOWERS ARE BEAUTIFUL.

BY THE EDITOR OF POPULAR SCIENCE NEWS.

[We take pleasure in copying the following from the *Popular Science News*, of New York, of a recent date. It contains something that bears more or less directly on our late symposium on bees and fruit, and we are sure it will be read with interest.—ED.]

Every seed is but a crystallized memory of the past history of its kind, and every plant the realization in fact and experience of the grandest features of that memory. That a developing seed could receive a fitness in its structure for a wet or rocky soil while grown upon that which is dry and loamy seems impossible. That such fitness should be carried as a message from plants of the same species miles away, and taught to that seed before it had scarcely begun to develop in the parent flower, appears as if beyond sane belief. All this is nevertheless but a sober statement of what has been discovered by actual experiment. Two trees, shrubs, or herbs, remote from each other, can interblend their natures and combine their powers through the medium of a tiny dust-like particle of pollen. The seeds and plants derived from the union possess in large degree the fitnesses of both. United through its pollen with others having different powers and experiences, a new race is born with a double capacity of adaptation. Professor Charles Darwin experimentally proved that crosses between individuals give vigor in proportion to the variety of conditions to which the parents are subjected, and not in proportion to remoteness of kin. Foxglove (Digitalis purpurea, Lin.), Fig. 1, when crossed from plants growing near together in similar soil, shade, and surroundings, never gave as good seed as when crossed with pollen from plants of a remote neighborhood. ("Cross and Self Fertilization," page 447.) The flower-stems produced in the two cases were as 100 to 47, and the average height as 100 to 70. Plants near of kin, but raised in remote regions, when cross-fertilized with each other gave

improved stock. Plants remote of kin, but grown near each other, when crossed gave inferior results. When we pass through the woods or garden and the

FIG. 1.

little dust-specks cling to our garments, how many of us pause to consider that each impalpable particle we are so desirous of brushing away is a volume containing more wonderful and more accurately recorded facts than any man could write? Viewed with the microscope, traces of its beauty appear in every distinct form assumed. Each kind of plant has a form for itself, and, though borne on the passing winds miles away from the producing anthers, every tiny speck is sufficiently distinct to recognize its kind. In Fig. 2 is shown this dust from fifteen different kinds of plants, and surely no one could, after familiarity, confound them. Here is pollen from the lily (*a*), buttercup (*b*), hollyhock (*c*), enchanters' nightshade (*d*), wild-balsam apple (*e*), mountain laurel (*f*), bassella (*g*), lark pine (*h*), evening primrose (*i*), chiccory (*j*), white pine (*k*), musk plant (*l*), burr cucumber (*m*), passion flower (*n*), and scolymus (*o*). These external appearances are, in their way, remarkable, but they shed no light on a pollen grain's unfathomable potentiality.

Every grain seems to be husbanded for the perpetuation of the plant, or in some indirect manner to aid that perpetuation. For a plant to squander its life force in producing a superabundance of pollen is to lessen its resisting power against adverse forces in some other direction. In the struggle for life those survived best that were able to get the largest number of healthy representatives with a minimum of such expenditure. Every plant that gained some contrivance to save its pollen from loss became the parent of more vigorous offspring. Little changes that aided but slightly were multiplied through successive generations until great changes were the result. Plants occupying positions that caused unusual strain upon their structures were those that such savings and the consequent reserve force benefited most. But this saving of pollen introduced a necessity for some contrivance to carry it in an economical manner from plant to plant. The method chosen shows the perfection of natural adjustment to a remarkable degree.

The pistils and their seed-bearing ovaries usually occupy the center, while the stamens, like a circle of sentinels, stand guard around them. This is seen in the cotton flower, Fig. 3. In this A is the pistil, B the stamens, and C the ovary. Their production of pollen is also less, since the necessity to sow every inch of the country that perchance a few grains may strike the stigma (or top of the pistil) of a kindred plant is now at an end. But how? The bringing together of both organs in a single blossom tends to self-fertilization, which has been shown to injure them. A careful examination of these flowers will reveal a most wonderful and almost numberless set of contrivances evidently intended to keep the pollen of the same blossom from reaching its stigma. These are in all degrees of perfection, from those that allow of free contact to those that exclude all possible contact. As they would all most surely perish without fertilization, and as they would slowly, but as certainly, deteriorate by self-fertilization, their winged friends come to their relief, and with the greater certainty the more enticing their forms, fragrance, and color. On any bright day of the summer months, in the forest, on the prairie, or in the garden, insects can be seen at work consummating these unions. Butterflies and moths, *bees* and humming-birds, lingering around a bed of flowers are doing more than enjoying themselves with the fragrance and sipping the honey from the nectaries. The apparently trivial act of one of these in seeking food is fraught with changes

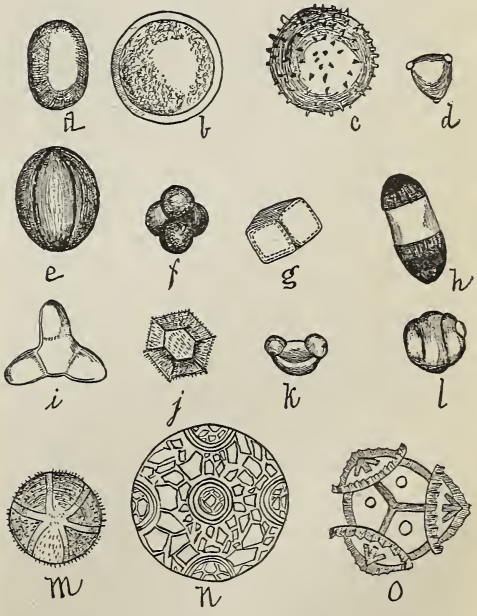


FIG. 2.

of great importance to the floral world. They carry upon their bodies supplies of pollen which are borne from plant to plant. If you watch a bee as it

FIG. 3.

forces its way down the honey-bearing gland of a fleur de luce (iris), Fig. 4, you will observe how it rubs its pollen-covered back against the stigma, A, on entering, but on finishing its repast it can not return without a complete reversal of its body. This covers its back once more with pollen from B, which it carries to the next flower. In the mountain laurel (Kalmia latifolia) as it awkwardly tumbles among the bent stamens they spring up and cover it with their yellow dust. This it bears away to another plant of the same kind, where, by its movements, it is rubbed off upon the stigmas. Upon close inspection it will be found that, as a rule, the part of the insect bearing the largest pollen load is the very part it finds it necessary to turn toward the stigma in honey-bearing flowers when it seeks their sweet product. In lilacs and some others the insect first gets its head daubed with honey and then with pollen, which thus adheres, until, reaching another flower, it rubs past the stigma, where it is deposited. In many other flowers the pollen is naturally rough or sticky, and makes itself fast to whatever part of the insect presents itself. In some it is strung like beads on threads, in others it is in little packets cohering together. Sometimes it is projected with force against the insect so as to facilitate adhesion. In a few cases it is locked up in little boxes which the insect's touch opens. In some, hinges and traps are devised so that the insect can not enter the flower without throwing the pollen over itself, as the touching of one part moves as a lever the other.

Wind-fertilized plants are frequently fertilized by insects, and from them it is believed all our pretty flowers sprang. They occasionally display beautiful colors when the vitality of a part is low, and honey and odor frequently can be found upon them. These were evidently the starting-points for selection to work upon in leading up to lilies, geraniums, and orchids. Those plants that displayed the greatest amount of a color pleasing to certain insects were most often visited and hence best fertilized. The least beautiful, if unable to continue producing pollen enough for wind fertilization, and failing to attract insects in sufficient numbers, were slowly extinguished. Every added beauty to a flower, by increasing its attractiveness, gave it the advantage in the struggle over its fellows, because it was made to produce more and better seeds. Features of color, shade, or odor pleasing to one kind of insect proved displeasing or indifferent to another, so that a large variety of forms resulted. Dull yellow flowers are evidently obnoxious to beetles, for we find that they almost entirely avoid them. Dull purple seems to be the choice color of the host of minute insects that swarm around marshes, the margins of lakes, and wet places generally. White is the favorite color of night-flying moths. Butterflies and bees choose brilliant reds, pinks, blues, and violets. By actually counting the number of insects visiting various flowers during

FIG. 4.

the course of a day, it is found to be the universal rule that, where other things are equal, those blossoms that are most conspicuous are oftenest visited.

NOTES ON CALIFORNIA HONEY-PLANTS.

THEIR PECULIARITIES; AND THOSE WHICH YIELD THE MOST HONEY.

By Prof. A. J. Cook.

The California honey flora has two striking peculiarities which are of exceeding importance: It is very extensive, and nearly all the most important honey-plants, like white clover in the East, are in bloom a long time. I have kept close watch of the bees on the flowers this summer, and have been glad and surprised at the long period of work. Many plants are in bloom weeks and even months, and during all this long period they are visited daily by the bees. I believe this is why such phenomenal yields are secured as were reported to me at the last meeting of the State Association, and through me to GLEANINGS, by such men as Wilkin, Corey, Mercer, etc. Two weeks is a long flow for linden in the East, while white sage —the linden of California—is in bloom for over two months, and this range is still more broadened by the difference in time of bloom in the valleys and canyons. Most of the honey-plants consist of innumerable blossoms which occur in long racemes, or heads. The flowers commence to open below in racemes, and creep along toward the top, which they do not reach for many days in the famous white sage. In the ball (or black) sages, the same is true. The lower balls open first, and each ball has a centripetal method of blooming, which still farther prolongs the period of bloom. The citrus-fruit bloom is similarly interesting. The orange is in bloom for weeks, while the lemon bloom is scattering its attractive odor for the entire year. The periodic drouth which comes once in two or three years, and the cool winds, which have been very marked and common this spring, combine once in about three years to shut up the nectar-fountains, and destroy the honey crop and the bee-keeper's profit.

The following are the principal sources of honey, so far as I have observed this season:

White sage, *Audibertia polystachia.*
Ball (or black) sage, *Audibertia stachyoides.*
Ball (or black) sage, *Audibertia Palmeri.*
Ball (or black) sage, *Audibertia Clevelandi.*
Blue phacelia, *Phacelia tanacetifolia.*
California clover, *Hosackia glabra.*
Small blue phacelia, *Phacelia circinatax.*
Wild buckwheat, *Erigonum fasciculatum.*

This last and the sages are the important honey-plants. They yield enormously, remain in bloom a very long time, and the honey from them is unsurpassed in appearance and flavor.

Of course, the fruit-bloom is very important. Much of it comes so early that the bees are not yet strong enough to secure much surplus from this source, though fruit honey is not infrequent in the California markets, and is far more important aside from mere stimulation than is the same in the East.

The above report of flowers is not full, but contains the most important. I ought to have included a small strawberry, or blackberry-like flower, *Horkelia Californica*, which is constantly visited by bees.

HONEY-DEW A SECRETION FROM APHIDES; A REPLY BY PROF. COOK.

I was surprised to see the note in GLEANINGS for May 15th, from Germany, to the effect that bees never gather nectar from aphides, or plant-lice. I have known bees to collect the nectar extensively from aphides, especially the larch plant-louse and the elm-gall plant-louse. In several cases, when bees would be swarming on the trees, collecting this nectar, I have been able to collect enough in advance of the bees to test its quality. As I have stated in the bee-papers and in my Manual, I found the nectar, and also the honey from it, to be exceedingly pleasant. I have received twigs of pine from Oregon and Washington, covered with sugar, and on the twigs I found many dead plant-lice. I have little or no doubt that the crystals were from evaporated honey-dew. It would seem that the assertion from Germany must be an error, as we are coming to find more and more that animals and plants behave much the same in all countries, especially in the same latitude; and it is positively true that bees gather aphis honey-dew in America, and often store much honey from this source; and, more, that the honey is often light-colored and of pleasant flavor.

The other statement, regarding honey-dew from bark-lice, or coccids, is also wide of the mark — at least in America. The honey-dew is not simply sap, as the taste will quickly show; nor will pricks or wounds at this season induce a flow of sap. I have no doubt that the nectar comes from the lice. This nectar is always, so far as I have seen, dark in color and rank in quality, and never fit for table use.

THE NEW BEE-DISEASE.

The new bee-disease is becoming very serious in this region. Mr. R. B. Herron, bee-inspector for the county of San Bernardino, called on me the other day and reported that at least 5000 colonies of bees had been destroyed by this malady between Claremont and Grapeland — twenty miles east. He said he found none east of Grapeland.

I have heard of it in at least four counties. I have examined several colonies, and find in every case that not only are the mature bees dying, but the brood also. The dead brood is scattered, and does not seem at all like foul brood. The dead bees are always in shape, and never in the brown, sticky, ropy mass that we find in foul-brood cells. I am not sure that the dying-brood and mature-bee mortality necessarily go together, but I have found them so in all cases that I have examined. I think Mr. Herron, who, by the way, is a real scientist, and one whose opinion would be valuable and au-

thoritative, finds that they do not always go together. The board of supervisors of San Bernardino Co. have instructed Mr. Herron to make a complete study of the subject. I have also purchased colonies, and shall watch the disease, and try remedies, in hopes to answer it.

You think the warm climate may favor this malady. We have never heard that the climate of France and Italy, which is similar to that of California, was deleterious to bees. In fact, we have always supposed that a warm climate was favorable to the honey-bee. Is it not probable that this is some epidemic, like "epizootic," that attacked the horses in 1872, or like the grip, which has carried off so many people in the last few years? I hope this will prove to be the case, and that we shall very soon be rid of it. Even now I see signs that it is disappearing.

Claremont, Cal., June 5, 1894. A. J. COOK.

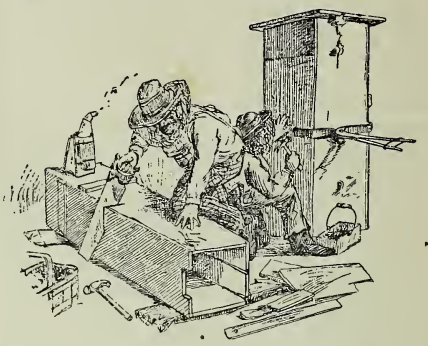
[Prof. Cook is doubtless correct regarding the source of honey-dew; at least, his position is supported by nearly all the authorities in the past. We hope he will make further researches, as we should like to know more about this new disease.—ED.]

RAMBLE 111.

By Rambler.

IN the morning an inventory of the amount of work to do revealed that 96 of those old hives were to be nailed up, sawed off, calked up, and burlaps nailed over the tops. The teams would all be back the next afternoon. I therefore had a day and a half in which to try to do the work. The greater share of the old doors could be nailed on with but little trouble; but for any refractory hives that would not with ordinary coaxing come together, a large pair of tongs was provided. By clamping across the back of the hive, springing the handles together, and holding them in position with a ring, as shown in the cut, the edges of the hive were squeezed up into proper position to be nailed. By the time I had given the bees a dose of smoke, and banged several nails into their hives, they were somewhat surprised; and they were evidently more so when I placed the hives horizontally on the ground, rolling it over as I sawed around it. As the Harbison frames are fitted into mortises, and brace-combs are plentiful between the top-bars, there was no movement of the frames under such rough treatment.

The top usually came off in several pieces. The hives being made of extremely splitable redwood, the ground was soon well covered with the fragments. If the old adage is true, that a good workman is known by his chips, I had enough chips to claim the title.



SAWING AND NAILING HARBISON HIVES BEFORE REMOVAL.

Before night I had made good progress, and was getting quite anxious to have the bees all ready to load into the wagons when they returned. Things had gone along very nicely until toward night, when the clouds gathered and it commenced to drizzle. I suppose that nail I was driving was a little wet, and the hammer ditto. A full blow at it glanced and landed full on my thumb-nail. Oh how that did hurt! how I did dance! how I did throw that hammer! and how I did kick up a row generally, there all alone, and said things I repented of afterward! That finished my nailing hives, and it was a little provoking to think it was the last hive and the last nail on the job, and then to have driven so many successfully, and hit the wrong nail at last, and that a thumb-nail, and utterly ruin it! I ate my supper with sourness of visage, with twinges of pain, and under increasing rain.

After building a big camp-fire I retired to the flat for a rest; but I had not lain long on the blankets before I made a discovery. My roof was leaking. An examination revealed the fact that the wind had carried this roof clear over, and pitched the shakes the wrong way; and, instead of shedding rain, it was an excellent conductor of rain to the interior. The flat had to be abandoned; and, making a sort of chicken-coop arrangement with some boards in front of the camp-fire, the blankets were moved in and a passably comfortable night passed, considering the painful condition of my thumb.

The rain had suspended business in the morning, leaving the temperature cool, and sky still lowering; and through the day there was now and then a brief shower, and two or three actual snowstorms. The snow was the kind that is done up in round packages like homeopathic pills.

In relation to my day's work, suffice it to say

that the 96 colonies were all ready to load into the wagons when they arrived about noon. We were not many hours in loading, and had some hours to drive before nightfall. I was sent forward with the pony team, and was directed to push ahead, which I did until I struck Temecula, about 10 miles from the Oaks. Here I put up with my host of former acquaintance, and had a shake roof over me that night that ran the water in the right direction. A warm room also abolished shakes in the bed, of which there were several the previous night.

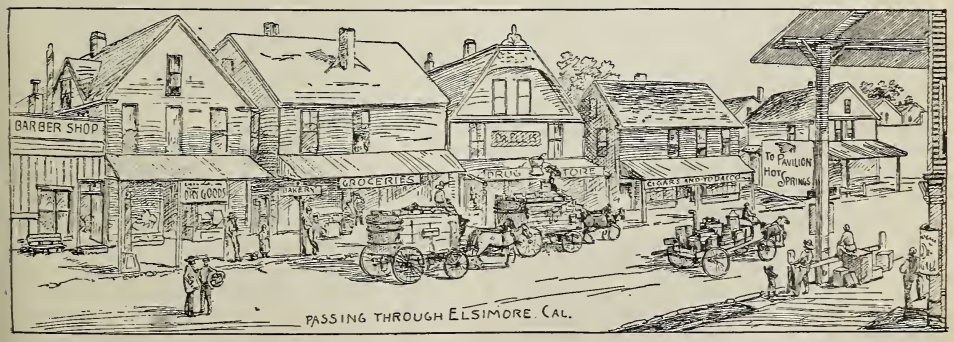
Owing to their heavy loads and wet roads, I distanced the other teams, and they stopped for the night in Via Cetas, five miles behind me. Sunday morning dawned bright and beautiful. I was not anxious to drive all day Sunday, and would have preferred a quiet rest. Mr Wheeler, Powell, and brother, were church-going men, and they, too, would have preferred a restful day; but the bees must be transported as rapidly as possible, and I knew they would be hustling after me. So at half-past eight I was on the road again. While I let the ponies take their own time, I enjoyed the various phases of nature that met my vision, and was soberly reflecting upon the various kinds of Sunday work done here in California. These reflections were continued for several miles, and were broken into rather suddenly by seeing a corralful of cows, and something that resembled the figure of a man walking around among them. From the appearance at a distance I thought I had discovered Darwin's "missing link," and hastened the ponies along. Yes, there was the rear prehensile appendage, protruding from beneath his blue jeans jumper. I was about to shout with exuberance when a nearer view revealed a milk-man with a one-legged milking-stool nailed to the *seat of his overalls*. If I was greatly disappointed over the missing-link problem, I was greatly amused at the movements of the stool and the man; or the man and the stool. It was a case similar to the dog. The observer didn't know whether the dog wagged the tail or the tail wagged the dog. I also learned a valuable lesson in the putting of temptation behind you. When a milking-stool is nailed to the far rear of a man, and the cow inadvertently bites her tongue while chewing her cud, and, by way of relief, puts her foot into the pail, the angry man has no available stool with which to belabor the

"I SHALL ACCUSE YOU OF BEING RAMBLER."

poor critter. I again reflected that the cow and the bee, those hand-maidens of nature that make the land to flow with milk and honey, both need much work with them on Sunday.

Although I traveled leisurely I arrived in Elsinore ahead of my companions, and resolved here to wait for them, as it was getting late in the day. I didn't know but we would camp here before braving the mountainous road ahead of us.

My hour of waiting was put in by inspecting the town of Elsinore—as quiet this day as the most orthodox New England town—admiring its pretty lake, covered with thousands of mud-hens, ducks, and other waterfowl. The hot springs, for which the town is noted, are cen-



PASSING THROUGH ELSINORE, CAL.

trally located. I longed to plunge in and bathe and shave, for it had been ten days since I had enjoyed such a privilege, and I felt rough, and looked as rough as I felt. The ponies were tied near a drugstore. The proprietor soon came around, and, observing the bee-hives, commenced to talk bees. He looked me over so suspiciously that I thought he had mistaken me for a stray member of the Industrial Army. He soon arrived at a point, however, where he couldn't hold in any longer, and he exclaimed, "Well, sir, I do not believe there is any person I ever saw who will answer to the description of Rambler better than yourself. I shall charge you with it, any way."

After a laugh at his shrewdness we had a pleasant chat. I will introduce Dr. Ellis to you. He is a bee-keeper, and finds running a drugstore in connection with bees a profitable business. Our conversation was cut short by the arrival of the rest of our cavalcade. A halt was made; a consultation followed, and, though black clouds hung over the mountains, and the shadows were creeping into the canyons, George cracked his whip over his big team. We all fell into line, and moved forward on the last 12 miles of our journey. It was a tough pull up those hills, made greasy by the recent rains; but they were surmounted; and at ten o'clock, when within two miles of the prospective location, the darkness was too deep for the trail, and we were lost—didn't know which way to go; so we did the next best thing—camped then and there. A camp-fire was started; we warmed our noses and toses, for the night was chilly; ate a brief lunch, rolled ourselves in our blankets, and went to bed under the wagons. We were lulled to slumber by the murmur of the bees above us. Before it was fairly daylight, George started us all by a series of lusty crowings. It took but a short time thereafter to get the bees over the remaining two miles, properly located, and released from their imprisonment. We then had a good square meal at the hospitable cabin of the overseer of the Virginia gold-mine. George and I pushed on to Riverside with the big teams; and, ere night came, the Rambler sat in his cosy home, where it seemed necessary that he should be to repair damages to body.

An inventory revealed the fact that I had a powerful sore thumb; right hand blistered with much sawing; ankle so near broken as to make me lame; lame neck, and rheumatics under the shoulder-blade. From such a hustling time in moving bees in the future, deliver me.

CALIFORNIA ECHOES.

By Rambler.

It sounds very good to hear the hopeful predictions in relation to the prospective eastern honey-flow. We like to hear of other people's prosperity, even if we are temporarily under a cloud.

Not a few bee-keepers here complained, in the spring, that their colonies were honey-bound. It was a good bind this year. Those colonies will pull through the off year.

I quote from a reliable medical authority: "Although derived from nutritious food, glucose is in a perverted shape, and to it may be attributed the rapid spread of Bright's disease." The same authority says that all beers contain glucose, and all beer-drinkers are liable to die of said disease.

Mr. Hasty calls attention to the Britons using the clamped boards, or gang of boards, for dipping foundation. I would inform friend H. that the gang plan is an old California invention; is used now, and has been for several years on this coast, and probably prior to their use in England. It is, therefore, an American invention.

Osburn, of Cuba, gives that island a boom in the *A. B. K.;* but those moths seem to be a terror. The bee-moth is not a troublesome factor in this State, as one might suppose. Cool nights are probably detrimental to its rapid propagation. If it were a great destroyer the careless bee-keepers would own but few bees, and there would be fewer careless bee-keepers.

It is said that eastern bee-keepers come to California from reading rosy-hued descriptions of the country; and, finding the rose in this case is not without its thorn, they return with a depleted pocketbook to their eastern homes. Their journey will not have been in vain if they will take the lessons to heart, and boom their own eastern town with the vim that a Californian does his. We have heard eastern men actually denounce their own town as a place utterly unfitted for habitation. We honestly believe it to be the duty of every householder to hold the honor of his town next to that of his family, and never speak ill of it. Enthuse over it, and that is the way to boom in now and then a new inhabitant.

Foul-brood Inspector R. B. Herron, of San Bernardino Co., has found a new bee-disease near Ontario. He thinks fully 5000 colonies are affected. The larvæ have a watery and grayish appearance, and it is fully as destructive as foul brood. Mr. Herron and Prof. Cook are at work upon the case, and it is hoped that some remedy will be found to banish the disease. This malady has made its appearance in the same locality that has been afflicted with bee-paralysis, and may be akin to it. A Mr. Stevens, of Etawanda, claims to have a cure for paralysis. He cures for 10 cts. per colony, and will sell the recipe for $1000. I was intending to go over and buy it; but our jack-rabbit bounty dropped off so suddenly that it cut off my resources for ready cash. It would be worth many thousands of dollars to Southern Califor-

nia to get a remedy for all the diseases bees are heirs to in this section.

MISTAKES.

WHY ITALIANS IN ITALY ARE NOT HYBRIDS; THE ALPS A PERFECT BARRIER TO THE BLACK RACE.

By W. C. Frazier.

We all make them. Some of us make greater and far more reaching mistakes than others. All of us are, or should be, willing to have our mistakes corrected. Some things in bee-keeping literature seem to me to be incorrect, and to which I should be pleased to call the attention of bee-keepers. One of these is concerning Italian bees. Some two or three years since, when the subject of Italian bees was being discussed in the bee-papers, an article appeared in GLEANINGS on this subject. It was one of those convincing articles that create no dispute and require no reply. The logic seemed to be that there were black bees beyond the Alps. The Alps were no Chinese wall, therefore there were black bees in Italy; and, further, that the black blood in the Italian bee accounted for its "sporting." This article quoted Hermann as proof, and quoted him incorrectly, which changed his whole meaning.

While there may be black bees in Italy, and I know of no reason why there should not be, if some one there wished to have them sent to him, yet, at the time Hermann wrote his book, queens were not to any extent trafficked in. The proposition was, therefore, a mistake so far as black bees getting into Italy over the Alps was concerned, and the writer will have to look farther for the reason why the bees "sport," if, indeed, they do when bred in their purity. I quote the passage referred to from Hermann:

"What is not a pure Italian is not Italian at all. If she is Italian she can produce only Italians. That which is not genuine, is and remains spurious.

"Where the home of the Italian bee is, by far the greatest number of queens are dark, almost chestnut brown; and for all that, there is no difference in the color of the working bees, whether they are produced by a light or a dark colored queen. This circumstance speaks for itself that the yellow Alp bees have been through the glaciers* insurmountably separated from the black bees on this side of the Alps, and could preserve their race in original purity. Their seat is the extreme north of Italy; there they have preserved their purity. The proofs of an argument must not be fetched from the moon."

*"The assertion of many German bee-cultivators, that the Italian bee has German blood, as not even the Alps, like a Chinese wall, would prevent them from mixing with German bees, may sound very well and comprehensible *on paper*."

But the matter would be quite changed if such a biographer would take the trouble to make, on the spot, inquiries which would present a scientific basis. The last German place from the Julier Pass is called Stella, between which place and Poschiavo (a distance of fifty miles) there are *no bees*.

In May, and sometimes to the end of the month, the road leads from Stella by the Julier Pass (nine miles), often through snow; then Oberengadien is passed (where not a single bee exists), and then through the Bernina Pass, which demands a march in the snow of about fifteen miles, and passes are the *lowest points of passage*.

Now, I should like to see that swarm of bees that could take its wedding-flight from Stella to Poschiavo, over two mountains covered with snow (for the snow does not melt in June, and even in July and August the temperature is so low that every bee would perish), for the purpose of mating with the nearest borderers in Poschiavo. The same may be said of the entire chain of passes. On the Bernhardin, Gothard, Splugen, Lukmanier, nowhere for thirty miles round, is a bee to be found, for they can not exist where, on account of the neighhood of the glaciers, the air is so cold.

There is an end to the insect-world, and we may be sure that it has not entered into the mind of an Italian to import a hive from German Switzerland, by which German blood may be brought into Italy.

You see the Chinese-wall business was entirely misquoted, to imply there was no such barrier, though undoubtedly not intentionally.

The article from Mrs. Atchley, in June 1st GLEANINGS, concerning queens which are pure Italians, at one time, and again mating, is correct and to the point, though good men have asserted that they knew to the contrary. I have heard them assert they had purchased imported queens which gave bees ranging from pure black to pure yellow; and while they were no doubt honest in their opinion, yet this could not be. Possibly the mistake may have been in the importer. Where an importer receives a lot of queens together, and is breeding queens in the same yard, it is not impossible, nor an infrequent occurrence, for a queen from her mating-flight to enter the hive where one is being introduced, and be accepted, and, of course, supersede the queen being introduced. I, at least, have never had a queen that was once *fertilized* that was ever mated again. Breeders are making a serious mistake by trying to carry water on both shoulders by trying to keep both imported and five-banded bees in the same yard. Their cross is *no good;* that is, they are not as good as either if kept pure. The cross is a violent one (as breeders say), and does not give good results in any way. As gatherers of honey they are not equal to either;

they are not gentle, and they are not up to either in beauty.

Now, the fact is, there are a great many purchasers (I almost said breeders) of five-banded bees who never saw a *real five-banded bee;* and a queen that gives a good per cent of real five-banded bees is something very remarkable. The great majority of them give bees that are yellow three-banded, and whose bees vary in color quite a good deal. "Golden" is a correct name for them. If it is money you wish to make, and can supply a large demand, *by return mail*, you want to breed goldens, and goldens only. You can sell ten of them to one of imported stock. But there is nothing to be gained in any way by mixing them. For reasons that are satisfactory to me, I keep only imported queens, and their daughters; but I have no quarrel to pick with the man who would not have any thing but the goldens. They simply suit my climate and range the best; but do not go to mixing them.

EIGHT AND TEN FRAME HIVES.

The expression has become almost stereotyped, that eight Langstroth frames are enough for an *ordinary Italian queen*. I wish to go on record as disputing this (though I use eight-frame hives, and have 25 sound ten-frame hives which I do not use). The point is here: A colony will do about as well on eight as on ten Langstroth frames, and I don't know but they will do better, as a ten-frame colony's brood-nest is the wrong shape. But make the eight-frame hive the same capacity as the ten-frame, by adding two inches in depth to the frames, and they will rear as great a percentage of brood in it as they did when it was only the Langstroth depth. You can still further add depth by making the frame the depth of a body and super, and still get your percentage of brood. But you *can not* get the same results, as suggested in a footnote, by adding the half-depth frames (this is one of the cases where it should be, but the bees say it is not). A brood-frame this depth, nearly 14 inches, is too deep for practical work. It's liable to break down and melt, and many other mishaps; and if hives are set at the slant and angle we see most of them when going over the country, a comb of this depth would extend across about the space of three combs. It is, I say, impracticable for ordinary use. But by way of experiment, an ordinary Italian queen will use as great a per cent of comb for brood in a hive of this size as her ordinary sister will use in an eight-frame hive; but the man who would make an apiary of all this size of frames would regret it; and if the eight-frame hive is reduced in length a half, making the frames 9¼x9¼, percentage of of brood will be the same. There seems to be some trouble in getting colonies of equal strength for experimental and other purposes. This, to me, does not seem very difficult. Choose colonies in which you believe the queens to be equal. Remove the queens and let them alone two or three days. Then take the colonies to the honey-house (which has been made bee-tight); shake all the bees off the combs together, and let them cluster. After they are all clustered, have boxes prepared, and a funnel, about as you do when bees are shipped by the pound. Set one of the boxes on the scales, and set the scales at the weight of bees wanted (remembering that bees full of honey, as they will be, will not be as numerous as the scales indicate; 5 lbs. will be only 3 to 3½ lbs. of bees). By using care there should be about the same quality of bees in each box. Set the boxes away for a few hours. Divide the brood as even as possible. When evening comes, shake the bees in front of the hives containing the brood, and release the queen which you wish to occupy the hive, and you have colonies as nearly even as they can be made, and the bees will be from different queens.

Atlantic, Ia., June 11.

[It is indeed true, that the rage seems to be for yellow color, both in queens and bees. If they are yellow the customer is satisfied, no matter what their other characteristics may be. (See editorials.)

Our imported stock, while dark or leather-colored, are remarkably uniform in good temper, prolificness, and good working qualities. Here is what a subscriber thinks of them:]

THE IMPORTED ITALIAN STOCK.

GOOD WINTERING QUALITIES, ETC.

By Harry Lathrop.

Mr. Root:—In 1883 I bought an imported Italian queen of you, paying $9.00 for her in May. She was of a fine yellowish cast, very active and prolific. I Italianized two-thirds of my apiary of 100 colonies that same season; and during the cold winter that followed, that same imported blood was quieter during the winter months, and came out stronger, than any others, not coming out on the cellar bottom to die, as the others did in 1884. She proved to be very prolific, and was ready to cast a swarm about May 20. As they failed to swarm I opened the hive ten days after, and, behold, there were as many as 20 large queen-cells, all sealed up, and not an egg in the hive. I said, "Good-by, old queen;" but in looking over the hive I discovered my queen. She had grown very small, and I saw I must have accidentally hurt her in my previous overhauling of the hive. I took out one frame of brood with all the adhering bees and old queen, and put it away in another hive, and added more young bees, and brood ready to hatch. In a few days she began to lay, and the bees began to build queen-cells; and in due time a fine yellow queen hatched and mated, and went to laying with the mother-queen, and remained. I took out the young queen, and the bees built more cells, and another laying queen

appeared in due time. This continued throughout the season. I have forgotten how many queens I removed from the hive. Sept. 20 I overhauled the hive for the last time, and found a beautiful yellow queen, with plenty of hatching bees, and the old queen still laying; but she was in a shriveled condition. Both would appear on the same frame together. I took a straw and directed their heads together, but they ignored each other's presence.

I find it characteristic of the imported blooded Italians for two queens to live in harmony together, and each generation to grow more yellow. In the summer of 1884, as fast as I got a load of new swarms I took them 4½ miles from home to an out-apiary. The next day after they had been carried away I noticed that, where the daughters of the imported queens stood, many bees returned with both pollen and honey, but not a bee from any other strain of Italians returned. That was convincing proof that imported blood is superior to any other, being stronger and better wingers. They had been as far, or nearly as far, as the out-apiary before being carried there. In 1886 I put on some top stories to extract from, but no queen-excluder. The old queen laid above, and the bees built cells above, and in due time a young queen hatched, went out, mated, and returned. There was an entrance in the upper story, for bees to pass through. That queen was of the imported strain. She remained in the upper story all summer, and was very prolific, while I found the old queen, which was a daughter of the imported queen, below, with any quantity of brood. That colony gave me more honey than any other two. I always keep my old queens' wings clipped, therefore I know the old from the young, even if there were no difference in their appearance. To sum up, I find that, to introduce imported blood into one's apiary once in a few years, greatly improves the bees in prolificness. They are more hardy, live longer, and, best of all, gather more honey, than any other strain of bees I ever had to do with.

Browntown, Wis.

TRANSFERRING BEES FROM BOX-HIVES.

Question.—Briefly stated, what is the best method of transferring bees from box hives?

Answer.—The majority of our most practical bee-keepers of the present time believe that what is known as the "Heddon plan" of transferring is the best of any so far given. This plan is as follows: Drive the bees from the box hive and put them into a hive furnished with frames of wired foundation, the furnished hive to be placed on the stand the colony had occupied up to the present time, while the box hive with its combs of brood and honey, with the few adhering bees, is to be placed close beside the new hive. In 21 days after all the brood shall have emerged as worker bees, drive the bees again from the box hive, driving clean this time, and, after destroying the queen with this last drive, or the one in the colony driven before, according as to which is the most valuable, unite the bees with those first driven out, thus getting the bees all on to nice straight combs, and in good shape to give a good yield of surplus honey. The combs are now taken out of the box hive, the honey extracted from them, and they are rendered into wax to help in making more comb foundation.

Now, while the above is probably the best known plan where the combs in the box hive are crooked or poor, and the season of the year that when the bees are securing honey from the field, yet if the combs in the box hives are good straight ones of the worker size of cell, or we do not have the foundation, or we wish to do this work early in the season, before the bees are getting honey from the fields so that they will not draw out the foundation readily, then, decidedly, the old plan or method given in nearly all the standard works on bee culture is the proper one to use. I never could understand the logic that melted up good straight worker combs, made the wax from them into foundation, wired the frames to keep that foundation from sagging, and then "transferred" the foundation into those wired frames with an amount of labor nearly equal to that required to transfer the original combs, all for the fun of saying that we used the Heddon plan. Straight worker comb, properly transferred into a frame, and fastened by the bees, makes just as good a frame of comb as is the one finished from foundation; and a frame properly filled with comb, without any wires in it, is just as good for all practical purposes, including shipping bees across the continent, as is the one having wire in it; while the wire is a positive nuisance if, from any reason, holes get in the combs from moldy pollen, mice, or any thing of the kind, so that we wish to "put in a patch" of worker comb to keep the bees from building in drone comb. I have shipped bees to nearly all parts of the United States and Canada on combs unwired, and have yet to hear of the first comb broken in transit. I do not wish to be considered cranky; but when a thing savors of more money out than of profits in I have always felt it a duty as well as a privilege to enter a mild protest, after which I am not to blame if any see fit to use any thing recommended which may result in a financial loss.

PREVENTION OF INCREASE.

Question.—What is the best way to keep down increase? The colonies which I now have fur-

nish about all the honey my home trade demands, so that I do not want to increase my number of colonies further than I now have.

Answer.—The surest way is to give plenty of comb room, and then extract closely. Probably not one colony in twenty will offer to cast a swarm treated in this way. In fact, very few colonies will offer to swarm where tiered up for extracted honey, and the extracting not done till the end of the season, providing that empty comb room is given as fast as needed. But when working for comb honey the case is different, and the bees are almost sure to swarm, no matter how much section room is given, or whether these sections are filled with foundation or not. My way of keeping my apiary at the original number of colonies while working for comb honey would be to unite the colonies about three or four weeks before the honey harvest, making one colony out of two, preparing for this in advance by keeping each colony shut on only half of the combs contained in the hives I used, and then let them divide by natural swarming to the original number, keeping down all after-swarming. Or you can let them swarm without uniting before the honey harvest, and, after the honey season is over, unite back to the original number. This accomplishes the same object as the former, only it gives more mouths to feed after the honey harvest is over, without any real gain in an increased crop of honey. Dr. C. C. Miller and myself are waiting, and living in hopes, that some bright bee-keeper will yet invent something which will entirely do away with the swarming desire in bees, so that they will work all the "livelong day," and all the days of the season, with the vim manifested by a new swarm, with no such thought as swarming. What fun there would be then in having out-apiaries, and piling up the honey—yes, and home apiaries also!

VIRGIN QUEENS AND DRONE EGGS.

Question.—Does a virgin queen ever lay any but drone eggs? Are the drones from these eggs capable of fertilizing queens?

Answer.—To the first part of the question, or, more properly, to the first question, I think it would be perfectly safe to answer no, although one or two cases have been reported looking a little as if a virgin queen might have produced a few eggs which matured into workers; but I think that this can not be other than a mistake. The second question is one which has not been settled satisfactorily to all minds. Some claim that such drones are just as good as any; and among those claiming this stand Prof. Cook, Dadant & Son, and others of nearly equal authority. On the other hand come such men as Dr. G. L. Tinker, G. W. Demaree, etc., who say that such drones are not capable of fertilizing queens. Mr. Demaree citing instances where he has had plenty of such drones flying, but no queens would get to laying till drones from a mated queen began to fly, when they became fertile and made good mothers. In my own case I have had no experience, but have always considered drones from a virgin queen, when reared in drone comb, as good as any. Such drones, when reared in worker-cells, may be virile, but I would not expect a queen to prove of great value which had mated a drone reared in a worker-cell. Mrs. Atchley wrote me, a year or two ago, that, when she moved to Bee County, she would try experiments to settle these matters, on an island not far away from Beeville, and yet far enough so there could be no possible chance of mistake. How is it, Jennie? are drones from a virgin queen as good as any?

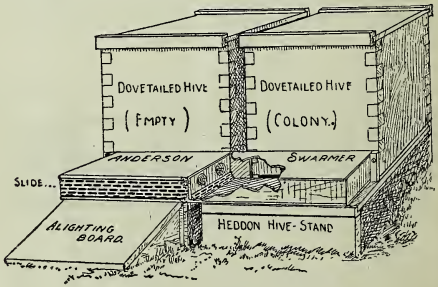
THE ANDERSON SWARM-HIVER.

DIRECTIONS FOR USING IT.

By Louis Anderson.

In the spring, or before the swarming season, prepare a hive-stand similar to the Heddon stand, large enough to hold two Dovetailed hives placed side by side, and two inches apart. Place the colony of bees upon the left end of the stand, and an empty hive upon the right (the bee-keeper is supposed to be standing in front of and facing the hives.

As the swarming season approaches (say from the first to the tenth of May), reverse the hives, placing the empty hive on the left and the colony on the right, taking care to have the front of the hives on a line with each other, and about two inches apart; then set the swarm-



ANDERSON S SWARM-HIVER.

hiver upon the alighting-boards, and fasten with a screw through the blocks on each end of the hiver, and screw up tight. If the hives stand upon a line there will now be no outlet for the bees except through the hiver. Now close the entrance to the empty hive by placing

a wood strip large enough for the purpose against the entrance upon the inside of the hive, to keep the bees out until they have become accustomed to the hiver, which will be after the first day. As soon as they have become accustomed to the hiver, remove the strip and put in frames of empty comb or foundation, and the hive is ready for swarms. A small alighting-board should be placed from the entrance to the ground, for the bees to alight upon. If the hives are placed well to the front of the hive-stand when first placed, and well to the rear when reversed, the entrance to the hiver will be very near where the entrance to the colony was before the hives were changed.

OPERATION OF THE SWARM-HIVER.

When the swarm issues, the bees and queen pass out of the chamber in the hiver in front of the colony, through the wire-cloth cones, into the chamber in front of the empty hive, and the queen is there trapped. The swarm, upon discovering the absence of the queen, returns to the hive, and, finding the queen at the entrance of the hiver, which, being directly in front of and communicating with the empty hive, the bees at once enter the empty hive with the queen and commence work. The hiver may now be removed by taking out the two screws, and all queen-cells except one cut out of the parent hive.

The swarm may be strengthened, if desired, by removing the hiver in the middle of the day, when the bees are flying freely, the entrance to the hiver being in front of the swarm-hive. After the hiver is removed, the field-bees will return to the swarm-hive. If the swarm is considered to be strong enough, the hiver should be removed early in the morning, before the bees are flying.

WHAT IS CLAIMED FOR THE ANDERSON SWARM-HIVER.

1. It will hive large full swarms.

2. To see if the bees have swarmed, it is only necessary to raise the cover to the empty (or swarm) hive.

3. Either of the hives can be examined without disturbing the other.

4. If drones clog the entrance to the hiver, the perforated zinc slide may be withdrawn and the drones liberated, and the slide returned; and the drones may then be destroyed, in the evening, at the entrance of the hiver.

5. If a second swarm issues before the hiver is removed, it will be hived with the first swarm; in such case the old (or laying) queen will be accepted by both swarms, and the young queen balled and destroyed.

6. If the bees do not swarm, the colony gathers honey just as well as without the hiver. During the season of 1892 the colony that made the most comb honey in my apiary of 40 colonies had a hiver attached, but did not swarm.

Bloomsbury, N. J.

THE HOFFMAN FRAME AS VIEWED BY A CORRESPONDENT FROM AUSTRALIA.

THE WHYS AND WHEREFORES EXPLAINED.

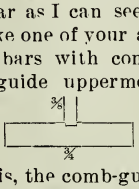
By W. S. Pender.

Judging from correspondence appearing in GLEANINGS, there seems to be some call for alterations to the Root-Hoffman frame. To my mind, the frame with the $1\frac{1}{16}$x$\frac{5}{8}$-inch top-bar and molded comb-guide is almost perfect. I can see no advantage in altering these sizes, not even to the new comb-guide that allows of the top-bar being almost $\frac{7}{8}$ inch thick. I think the comb surface is small enough. From my experience with $\frac{7}{8}$-inch-thick top-bars I find just as many brace-combs between the top-bars as with those reduced to $\frac{5}{8}$ inch thick; if the bar is widened to $1\frac{1}{8}$ inches, fewer brace-combs *may* be present. I have not tried it, but fear it will tend to increase the difficulty; for I have observed that, where a top-bar twists so as to lessen the space between the frames, a larger number of brace-combs were present. If the top-bar is made $1\frac{1}{8}$ inches wide we increase the difficulty in uncapping the combs; and unless an alteration is made at the same time in the end-bars, we weaken the spacing part of the frame. As to burr-combs, I find a top-bar $1\frac{1}{16}$ wide by $\frac{5}{8}$ deep absolutely proof against them. Where I have found burr-combs in using these frames, I could always trace it to other causes, such as twisting of top-bar either up, down, or to one side, or the comb has been built down over the bottom-bar of the frame above. I have *never* had a $1\frac{1}{16}$x$\frac{5}{8}$ top-bar sag through the weight of honey therein, and I have had frames of honey weighing over 10 lbs. Don't you think there is enough wood in a hive without putting more, and the comb surface small enough without making it smaller? I am of the opinion that a top-bar $1\frac{1}{8}$x$\frac{3}{8}$ would be equally burr and brace comb proof as one of larger size: possibly it might sag when white pine is used; but could not a stronger timber be used? The ends on which the frames hang could be reduced to $\frac{3}{4}$, which would give plenty of room for the fingers when handling frames, and allow of the end-bar being made stronger where it passes the top-bar.

I notice that the frames you are now making are only $\frac{1}{16}$ thick, where the top-bar rests on the rabbets. I never saw any notice given of this alteration, and fail to see what advantage the reduced size has over the old $\frac{3}{8}$ size. Perhaps you can inform me as to the reason for this alteration. The bottom-bar, I think, as now made, $\frac{3}{8}$x$\frac{3}{8}$, is too thick and too narrow; the thickness destroys comb surface, and the narrowness allows of the bees pasting comb all over it, which they often continue down to the top-bars of the lower set of frames. I do not call this a burr-comb, but it is as great an evil. The only use I have seen the bees make of the

comb on the narrow bottom-bars is to build some cells along one side of it, in which honey is stored, so that, if you wish to reverse this frame, the projecting cells at the bottom will touch the projecting cells on the bottom-bar of the next frame; this, therefore, interferes with the interchangeableness of the frames.

I will now suggest a bottom-bar. I have not tried it, nor have my bees, so I can not say that it will be a success; but, so far as I can see, it ought to be! Make it just like one of your all-wood Simplicity-frame top-bars with comb-guide, only turn the comb-guide uppermost. The sizes I think best are—



Let the comb-guide be barely 1/16 thick. If the bees do not make a success of it as it is, the comb-guide need be put on the frame only until the comb is built, and then the true bottom put on. The thin edge of the comb-guide would allow of comb foundation passing it when stretching, and would be attached by the bees; the 1/16 thickness would not affect the comb built over it being used for brood. No alteration is needed to the 8-frame hive, except that a little more room might be given for the follower; otherwise it is perfection.

Half-story frames are first-class. I have always had good results from them. Certainly they are not interchangeable with full-depth frames; but they have so many advantages that I am using them largely, having closed instead of Hoffman ends.

There seems to be but little success in landing queens alive from America to Australia. Where is the trouble? Is it the candy, cages, changes of temperature, too hot a place on the steamer for the mails, or what? I received 9 queens alive from Italy, out of 10. These were six weeks on the road. They came in small boxes containing small combs of honey and bottles of water, about 200 bees being in each. They came by freight. Could not queens be sent by post with honey and water, as well as by freight? I think too much attention is paid to small cages to save postage. The candy used is not satisfactory—sometimes too soft and sometimes too dry. I can indorse what R. H. Jervis says on page 23. Even candy we make of powdered sugar and honey changes in our climate. Sometimes the same lump is too soft, and perhaps next day dry.

W. Maitland, N. S. W., Australia, May 16.

[*Depth* of top-bar is not as important as *width;* yet the former has *seemed* to have some bearing on the matter of the exclusion of burr-combs. We say "seemed," because we are not sure; but to be on the safer side we decided, early in the season, to give the full 7/8-inch depth, particularly as some experiments by Dr. Miller seemed to show more favorable results. On account of the difficulty that some seem to experience, of attaching comb foundation to the new thick tops, perhaps it would be well to consider the old top-bar 7/8 inch deep: but the width is surely better 1 1/8 inches, chiefly on account of *brace*-combs; 1 1/16 inches hardly bars them out. We should be pleased to hear from our subscribers.

You will notice that we have already narrowed up the projection to the frame, to give more finger-room; see page 467. We have also already modified the bottom-bar from 3/8 inch square to 1/4x3/4, as you will see by referring to the same page. The comb-guide for the bottom-bar might be serviceable in securing a comb attachment; but it might be too much of a good thing.

Why did we reduce the thickness of the projection? Because the construction of the Dovetail hive seemed to necessitate it. The top and bottom dovetails are 1 3/16 inch deep. After taking out 1/8 for tin rabbet, and 1/16 for projection, we have just 1/16 for bee-space over the frames. But, you may ask, why not have these dovetails 1 1/16 like the rest? Because that would make the hive-body 9 3/4 deep, when the standard L. frame is 9 1/8 inch. The reduction of the top-bar projection, from 3/8 to 1/16, was made some time ago, along when the hive first came into popularity.

Recently we have not had success in mailing queens to Australia. We scarcely know where to locate the trouble. In some cases the candy was undoubtedly too soft, and in others the great change of climate from the mountains of California to the hot dry climate, was enough to kill the queen. We are sending to-day to H. L. Jones, Goodna, Queensland, Australia, two queens—one put up in our export cage, with Good candy; and another in a similar cage with the same food, but with a water-bottle—the mouth of the bottle stopped with a sponge, *a la* Hutchinson. We will repeat this experiment several times through the season, and later on will report results.—ED.]

THE STEVENS FRAME-SPACER.

In my article in GLEANINGS, May 15, I think perhaps there was a little too much prominence given the fact that my spacers can be attached to frames already in use. They can be attached to such frames, but it is a little difficult unless the end-bars are of the proper width to fit the spacers. The end-bars should be exactly one inch wide, otherwise they would have to be renewed. If the end-bars already in the hive are one inch wide, they are all right for my spacers; it will make no difference about the thickness. I prefer end-bars 3/8 thick. It is not necessary to change the whole frame unless it is desired to adopt a different top-bar from the one already in use. In that case an entire new frame is better; and then if my spacer is affixed it will speak for itself. While it may be used on old frames, it will work so much better on new ones made especially to fit it, I feel certain it will pay the apiarist to gradually make the change.

You say you like to have your frames stick a little so as to be always ready for moving. Theoretically the Stephens spacer will not stick; but in actual use it will to some extent

While the bees have no chance to deposit much propolis, still they will deposit some in any case—just enough to "stick a little." If you would try a few hives at the Home of the Honey-bees, I think your chief objection would soon vanish into air. The Stephens spacer strikes a happy medium between too much and too little "stick." If the bee-master wants a little propolis on his frames, he gets it—just enough to keep the frames from rattling while being moved over rough roads; and if he doesn't want any at all, he gets as little as it is possible to have where any thing touches between the frames. GEO. W. STEPHENS.

Denison, Ia., June 5.

APPLE-BLOSSOM HONEY OF GOOD FLAVOR.

I took 16 lbs. of apple-blossom honey from one hive to-day, in 1-lb. sections, and well capped over. Those of my friends who have sampled it pronounce it the most delicious and aromatic honey they ever tasted. Is that so bad for a first-year dude bee-keeper? DR. C. F. HODGE.

Clark University, Mass., May 27.

[Apple-blossom honey used to be considered rather poor quality; but it is now evident that, from the number of reports like the foregoing that have been received since that, we have misjudged it. To determine the matter beyond a doubt let us have more reports, because there was, this season, a fair crop from fruit-bloom, a large part of which was from apple.—ED.]

YELLOW SWEET CLOVERS AND OTHER CLOVERS.

I've been watching with much interest the blooming of the yellow sweet clover—*Melilotus officinalis*. It bloomed early in May, and bees have been working upon it. It appears as if this plant should be brought more into notice, as it fills the interim between fruit-bloom and white clover. There is much sweet clover of the white variety—*Melilotus alba*—in this locality, of very rank growth, but it shows no sign of blooming. The yellow sweet clover was a great favorite of D. A. Jones, who called it Bokhara clover. Judging from what I have seen of it, I'm of the opinion that it is richer in nectar than the white variety—has finer stalks than the latter named, and is a free bloomer. White clover—*Trifolium alba*—is almost a lost tribe in this vicinity, which is probably owing to the severe drouths of past years. The weather has been quite cool of late, and bees can do but little. MRS. L. HARRISON.

Peoria, Ill., May 30.

[The sweet clover in our vicinity seems to be principally of the white persuasion. It is more abundant along waste places this year than usual.—ED.]

EVERY THING RUN DRY EXCEPT THE SALOONS.

Iowa is suffering from a severe drouth. The meadows and pastures are badly dried up, including white clover; and unless basswood gives a fair yield of honey. Sam Wilson's prophecy will prove true—"Less honey in Iowa than last year." Every thing is running dry except the saloons this year in Iowa. They are running wet. One saloon in this town is reported to have taken in $1600 in ten days; another to have sold 17 kegs of beer in one day. It has been several years since they could go into an open saloon and drink, in this part of Iowa, and the novelty of the thing may create a boom. It doesn't look as if we were seeking first the kingdom of God and his righteousness very fast—going back from prohibition to the open saloon. There should be placed over the door to every saloon the motto that used to be over the door to Stormy Jordan's, in Ottumwa—"Road to Hell." O. B. BARROWS.

Marshalltown. Ia., June 8.

[We hope your good people will wake up soon. The Devil is not asleep, but many times Christian people are.—ED.]

GALVANIZED IRON FOR HONEY-UTENSILS.

As your inquiry about galvanized-iron vessels did not receive as many replies as I expected, I will throw in my mite to help settle the matter. I have used galvanized iron for honey-tanks and extractor for about 10 years, and find that, when honey is left standing in them for any length of time, that part next to the metal acquires a disagreeable taste, but it is not dangerously poisonous, as no one can eat enough of it to become poisoned. I have fed such honey to the bees, without noticeable effect. I always wax the vessels now by heating them and rubbing a piece of beeswax over them, thus giving them a very thin coat of wax, which makes them all right.

Leslie, Ga, May 26. T. W. LIVINGSTON.

ENCOURAGING FOR FLORIDA.

East Florida has not seen such fine promise for a heavy crop of honey since 1884 as now makes its bee-keepers smile. The crop from the orange-blossoms was an unusually good one, and the saw-palmetto and gallberry have not shown bloom as at present since the above date. Nearly every one owning bees here is taking honey by the ton; and the black mangrove, not yet in bloom, gives promise of being much earlier than usual, and is loaded with blossom-buds. An average colony on scales in my apiary is bringing in steadily about *eight pounds a day*. W. S. HART.

Hawks Park, Fla., May 21.

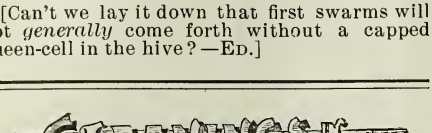
DO FIRST SWARMS EVER LEAVE BEFORE FIRST QUEEN-CELLS ARE CAPPED?

In the A B C of Bee Culture, p. 382, Note 207, Doolittle says: "I do not believe the first swarm *of the season* ever issued until the first queen-cell was capped over." My experience this season contradicts this. May 8th I examined all my 9 hives, and there were no queen-cells. Next day my first swarm of the season issued, much to my surprise. The same evening another swarm issued from the next hive, but returned, as the queen's wing was damaged,

and I did not find her till too late. They issued again May 11th. The first queen-cell for the first hive was capped May 16th, and for the second hive May 15th. R. F. RITCHIE.

Rumford, Va., June 8.

[Can't we lay it down that first swarms will not *generally* come forth without a capped queen-cell in the hive?—ED.]



Know ye not . . . . that ye are not your own? for ye are bought with a price.—I. COR. 6:19, 20.

AN exchange says: "If you stop to answer every fool, you won't have much time to talk with sages."

BRO. YORK has made a visit to Dr. C. C. Miller, and will tell about it in an early issue of the *American Bee Journal*. Say, Bro. York, it is a splendid thing for editors to rub against bee-keepers. We get inspiration and helpful suggestions every time we venture out.

ONE of the oldest, most extensive, and most practical bee-keepers of the Pacific coast, Mr. R. Wilkin, of Newhall, Cal., writes: "I am trying hard to save my bees. Some are letting them starve." From various sources we learn that there will be very little California honey on the market this year, except last year's honey, and this will be scarce.

WE have just learned with surprise that the *Bee-keeper's Quarterly*, published by James Heddon, at Dowagiac, Mich., a new paper that was started last April, is ruled out of the mails as not being eligible as second-class matter. Mr. Heddon has sent out a circular letter to the subscribers of that paper, placing the responsibility for all this upon "some who recently have left no stone unturned to do up Heddon" And in connection with this he refers to the "opposition of some supply-dealers," and a certain "jealous interference." He does not say in just so many words that supply-dealers are back of it all, but the inference is that way. We are sure that no supply-dealer has had any thing to do with it whatever; certainly we have not, for we should never have supposed that his journal could have been rejected on the ground that it contained too much advertising for its publisher, or any other ground. The fact is, the Department at Washington is watching *new* publications with extraordinary vigilance, and many have been thrown out. Burton L. Sage's first paper, as legitimate a publication, it seems to us, as was ever issued, the *Bee-keeper's Enterprise*, was rejected.

THE JUNE NUMBER OF THE CANADIAN BEE JOURNAL

contains quite a picture-gallery. The first half-tone shows the apiary of the Goold, Shapley & Muir Co., which, we are told, is in Mr. Holtermann's yard. We presume it is here that all the new-fangled notions are tested and tried, and where its editor gathers some of his inspiration and material that graces the pages of his journal. Over on the next page is a half-tone portrait of Bro. York, and right beside him is—well, the associate editor of GLEANINGS. Bro. York and ourself sat in the same chair at the last meeting of the N. A. B. K. A. at Chicago, and Bro. Holtermann sees nothing inappropriate in putting our two faces on the same page, side by side. Well, we always did like to be seen in good company.

But what graces the pages of the journal more than any thing else is a couple of fine half-tones showing the editor's family. And well he may be proud of them.

CONDITIONS FAVORABLE TO THE GROWTH OF BASSWOOD-TREES

THE trees in our basswood orchard—some 4000 of them on 10 acres—are fairly loaded down with bloom—something that has not happened before in several years. The scarcity of bloom in the past years was partly owing to the fact that the ground was a little swampy, and last spring it was drained out. As it is, these trees have not done nearly as well in the same length of time as some other trees on dryer ground in the forest or in the shade of buildings. We have a few handsome basswoods on the north side of our main building; and although they are only ten years old, they are seven inches in diameter, and as high as the building. Trees planted at the same time, on the same street, in the open, are not nearly as large and thrifty. We have a few basswoods "over home," on ground well drained that were set out some four or five years ago, that are just beauties. Indeed, they are larger and more handsome than the majority of trees in the basswood orchard that have been growing for 22 years. Lack of proper shade, such as a forest affords, and, to a larger extent, lack of proper drainage, has made this great difference.

OUR BASSWOOD APIARY—WORKING UNDER DIFFICULTIES.

WE have just located an out-apiary in our basswood orchard. We selected the poorest-marked bees in our apiary, including a few hybrids, and placed them here away from our general queen-rearing yard.

By the way, we had quite a time in getting those bees down to the orchard. We were *bound* they should go last night, in spite of obstacles. The team was not available; hives were not ready, and, besides, it looked "awfully" like rain, and a regular downpour at that.

Well, we hustled the boys on the hives, got the team and wagon, and loaded the bees on, despite the fact that great big thunder-clouds just back of us threatened to give us a drenching, and despite the fact that the wagon looked as if it wouldn't hold up to even get out of the yard. We told the two yard-men that they need not go — that we and the teamster would take our chances, unload the bees if we got there, and put them where they belonged — one hive just opposite a basswood-tree. The wagon was so loaded down that we were afraid the wheels would break if we got on; so we mounted the bicycle. The roads were so muddy from a recent rain that we finally put the wheel in a barn, and ran on alongside of the team with its load of bees. It began to sprinkle. It then began to come down in big drops. It began to rain. Then it poured. We had on light calf-skin shoes, Knickerbocker suit, long stockings, and white sweater. Well, to make a long story short, we arrived at the orchard without mishap, unloaded the bees, opened up the entrances, and put off for home. Of course, we were soaked through, including the poor bees, whose hives had been covered with wire-cloth screens to give them ventilation; and those borrowed stockings were a sorry sight, and the shoes full of feet and water. We did not catch cold, any of us — not even the horses; and the bees—well, they are all right.

FOUR AND FIVE BANDED ITALIANS.

Our apiarist reports that some of the colonies of these bees are very vicious—very much like the Cyprians; and Neighbor H. gives the same account of them. Still, we have in our own apiary one colony that is gentle and good workers. Mr. Vernon Burt, of Mallet Creek, has several stocks of these yellow fellows, and he reports that they are not only gentle, but among the first to go among the supers.

As to wintering qualities, there are not any of the yellow bees that stand our northern climate quite so well as the ordinary three-banded and leather-colored Italians. Mr. Burt reports that his yellowest bees were the first to die last winter, and he is very successful in wintering his bees too.

Our apiarist, Mr. Spafford, says he has noticed for the last four or five years that these extra yellow bees are the first to succumb. This may be partly due to the fact that they are bred largely in the South.

The above is given as an unprejudiced and fair statement of the yellow bees as we have found them in this locality; but why they should vary we can not imagine, unless there is a little Cyprian blood in some of them. At first we felt inclined to call a halt on the rearing of these bees, fearing that many might be disappointed on encountering their temper. We have feared all along that some breeders were a little careless in running to color rather than to bees for business. On the other hand, we have reason to believe that some are endeavoring to breed for both qualities.

PROSPECTS FOR THE HONEY-FLOW.

For the last ten days the prospects have been rather discouraging. Reports seemed to show that there was very little white clover anywhere in the country; and in our own locality scarcely any could be seen in the old pasture lots, where years before it abounded freely. It is still early to speak for outside localities; but in our own, the white clover is just beginning to make its appearance. Basswood, too, is just opening up. The conditions for a honey-flow from this source were never better. The trees are literally full of flower-buds; and where the blossoms have opened up, the bees are humming around them as in the old-fashioned way, and already are beginning to drop in at the entrances; and as early as the first break of day there is that roar that sounds sweeter to the bee-keeper than music. Reports everywhere speak well of the prospects from basswood.

ALSIKE CLOVER.

Our neighbors who have been so fortunate as to be in the vicinity of alsike are harvesting nice little crops of honey. Neighbor H., about 2 miles to the south, says his hives are full of honey. Neighbor Chase, some eight or nine miles to the southwest of us, reports something like 40 acres near his bees. He is "in clover," surely, and we shall expect that he will have a big crop of honey, especially if basswood amounts to much. Neighbor Burt, some four miles to the north of us, also reports a considerable amount of alsike in his vicinity. He was instrumental in the first place in having it introduced, and now the farmers put it in of their own accord, as they do elsewhere, because they think it pays outside of any benefit that may accrue to their bee-keeping friends. We have had no alsike accessible to our bees; and as white clover failed to show up, our colonies have been running short on stores.

SWEET CLOVER.

There is more of it in waste places than ever before. The railroad embankments and roadsides are thick with it, and neither we nor any other bee-keeper scattered it.

THE RECORD BROKEN ON BIG CROPS OF HONEY; 1250 LBS. OF HONEY FROM ONE HIVE OF BEES.

We have heard before of wonderful yields of honey in Australia. The following is an extract which we make from an article that appeared in the *Western Post*, published at Mudgee, near Sydney, Australia:

I had five or six colonies that produced over 1000 lbs. each of honey that season, but I have only two down in my memo. book, whose extracting I put down every week after they had collected about 400

lbs. each. Since then I extracted some weeks as high as 80 and 90 lbs. from them during a very long and good season (nearly six months), and the result at the end of the season was 1250 lbs. and 1120 lbs., and I am sure two or three other colonies went very close to it. I put down in my yard-book how many tins I extract every day, and I always take a low estimate of the weight. The top-weight hive was a light hybrid, and swarmed once. The second was a pure lot, an October swarm, and I deprived them of a good many combs for queen-rearing. The honey came in so fast that I had to extract nearly all the frames in 20-frame hives to give the queens room to lay.

The last season has been very indifferent, and I got an average of only 85 lbs. per colony (spring count), the lowest for the last eight years. Since Christmas there has been very little chance of collecting honey on account of the windy, rainy, wintry weather. It appears you had a better season in your district. H. PETERSON.

Nuggetty Hill Bee-Farm, Wattle Flat, Apr. 2, 1894.

The highest reliable record for this country was between 500 and 600 lbs., by Mr. G. M. Doolittle, we believe. A bee-keeper in Texas was reported to have obtained 750 lbs.; but later inquiries seemed to show that there was some mistake; so we shall have to acknowledge that the Australians have just about doubled our record, and well they may; for they have honey-flows nearly the year round, we understand.

A BICYCLE VISIT TO THE APIARY OF MR. VERNON BURT.

OUR readers will remember Mr. Burt as one of the enterprising bee-keepers of Medina Co., and one whose apiary is almost in the shadow of the Home of the Honey-bees, being only four miles north of us.

As usual he wintered his bees successfully, and, as usual, he is going to get a good crop of honey. His neighbors have always counted him as being "lucky;" but he insists that it is not luck, but attention to business, and hard work.

When we arrived at his apiary this morning, June 26, we wondered whether we should find him there as we had always done before. Sure enough, he was at his post. Three swarms were in the air; but he was taking things very coolly, notwithstanding. "Why don't you get excited, and run about hither and yon?" we asked.

"Oh! my queens' wings are all clipped," he quietly replied.

As we neared where he was standing, the bees were boiling out of the entrance like hot shot. He stopped and chatted a little with us, and then leisurely walked into the honey-house, brought out a Peet cage, and waited for her majesty to crawl to the top of a blade of grass. Yes, there she was. He quietly put the open mouth of the cage over her, and then, after carefully pushing the slide in, leaned the cage against the entrance.

"My! the air is full of bees, and they will unite," we said.

"I don't care if they do—they will come back," he said, with quiet assurance.

"But suppose there is a virgin in one of them."

"Well, I don't suppose there is any, because I watch my colonies pretty close."

While the bees were flying up in the air, in one great black cloud, and making a roar, we sat down on the hives and chatted about the honey prospects; and then we looked into a few of the strong colonies to see what they were doing in the supers.

"But," said we, after we had looked at several where they were doing good work, "let us look into the supers of some of those yellow-banded fellows."

"Certainly; here is one."

Sure enough, they were piling in the honey, and building out comb from mere starters.

"These yellow fellows are among the first to enter the supers," said he, with a little pride as he looked at their yellow backs as they dropped in at the entrance.

By this time we began to ask where those roaring bees were.

"Oh! they are clustered over in that little tree."

And such a cluster as it was! It seemed to be about three feet across, and four or five feet deep, and so large was it that great handfuls of them would drop off on the ground, quickly to arise again to join the crowd.

"Well, now, are you going to let those fellows hang there?"

"Oh! they will go back when they get ready," said he, evidently thinking it cheaper for them to put themselves back than for him to do so, even if he could. Very soon a few of the bees began to go into one of the stands from which one swarm had come forth, and it looked a little as if they were all going into that one hive pellmell. At this Mr. Burt leisurely sat down in front of the hive and worked the Crane smoker until some of them began to scatter toward their own hives, or where they belonged. In about 20 minutes' time all three swarms had gone back to their old stands, but *not* into the *old hive.*

Mr. Burt puts a new hive with empty combs on the old stand while the bees are in the air. From the old hive he removes the supers and puts them on the new hive now on the old stand. The old hive is removed to another location. As it is, of course, greatly depleted in numbers, in a day or so he runs another swarm into it. By this means he keeps down increase, and satisfies the desire to swarm, and—piles up the honey. Last year he secured four tons, from a trifle over 100 colonies, most of which was comb honey. That is not bad, considering it was in Medina County—a county that does not boast greatly of its honey resources.

ON THE WHEEL; A VISIT TO T. B. TERRY'S.

All through the month of May I was impatient to get over into Summit Co.; but business, muddy roads, and one thing after another, prevented until Friday, June 8, when I got things fixed around so I thought I could go; but so many things needed attention that it was after dinner before I could get off; then something more had to be seen to until I was startled to find that it lacked only *20 minutes of 3*, and I must either give it up or make 30 miles before dark; and a goodly part of the 30 miles was up and down the tremendous hills bordering on the Cuyahoga River. I laughingly told my youngest sister that I would stand in T. B. Terry's yard before the sun went down, and off I started. The new light wheel made point after point, much quicker than the heavier one of the year before; and I want to say that, if any of you ever have a chance to take a spin in the vicinity of the town of Ghent, Summit Co., you will agree with me that it is one of the most beautiful places to be found anywhere. The road descends with many curves toward the river, and soft-water springs burst forth from the hills until they form a stream large enough to run water-mills, and so we have milldam after milldam along the roadside, with the beautiful pure water making many a sparkling waterfall. I asked a gentleman by the roadside if it would make much trouble to get me a drink of water.

"Oh, no!" said he. "Come in and sit down and I will bring you some that is fresh."

As he opened the back door I caught a glimpse of potato-vines under the apple-trees. Said I:

"Why, my good friend, how did you manage to have such beautiful large potatoes right out in the open ground, without protection?"

"Oh!" said he, "I have got some even finer than these. Come this way, please."

As we turned a corner of the house he led me right through—what do you suppose? Why, just the prettiest and "busiest" little apiary, all of chaff bee-hives, you ever saw; and just beyond them were the Early Ohio potatoes in such full bloom that it looked like a flower-garden. I stopped among the bee-hives. "Why," said I, "do you keep bees too?"

"Keep bees *too?*" said he, interrogatively. "Why, this is not A. I. Root, is it?"

"Yes, that is just who it is; and I have been thinking all the while that I ought to know *you*."

"Why, to be sure, you should know me, Mr. Root. I suppose we have both grown gray somewhat since we used to know each other quite well. My name is Porter—Dr. Porter."

By the way, it has more than once occurred to me that all sorts of garden-stuff are not only more forward in a sandy and gravelly soil, but that potatoes and garden vegetables generally have a brighter and more animated look where soft-water springs abound, than in the hard clay soils such as we have around Medina.

How beautifully my wheel ran down one little decline and then up and over another little hill, curving this way and that to get around the hills, taking the rider close up to the door-step of a little vine-clad cottage, then past a schoolhouse, now close to a mill, surprising the occupants of one quiet home after another by the speed and noiseless tread of the rubber tire. When I reached Hammond's Corners I felt a good deal like having supper. There was no hotel there, but I found friends in a twinkling.

Down we went those great long twisty hilly roads, flying under the covered bridge, over the canal and along the edge of the river, until I found the proper road, winding along another mountain stream, up toward Terry's home. I was so animated with the idea of getting there before sunset that I did not venture to even look around. I found friend Terry in that same beautiful dooryard—handsomer, yes, ever so much handsomer, than it ever looked before, and I asked him a little anxiously which way I should look to catch a glimpse of the sun before it vanished. Yes, there it was through the trees, a glowing, golden orb: and I had made my 30 miles in just about an even four hours, notwithstanding the hills and the amount of visiting I did while getting my supper. I felt quite anxious to know whether Terry's wheat would really show that it was a paying operation to work the soil over so many times before it was sown, last fall. And I was glad to notice the finest piece of wheat, perhaps, I ever looked upon. His locality, however, is a very frosty one, and they had been having frosts night after night, even though it was in the month of June, and he feared his wheat had suffered somewhat in consequence. It had also fallen down so as to injure it somewhat. Notice the difference in just 30 miles. We had been picking strawberries for a week or ten days, and yet none of his were ripe. Heavy mulching, and a location north of an evergreen hedge, had likely something to do with it.

Friend Terry and his son Robert are enlarging their farming operations somewhat this year. Robert is getting to be somewhere near 21 years old, and his father is naturally quite anxious he should choose for his associates those who neither drink, smoke, nor swear. Well, somebody told me, or else I dreamed it, that the boy has concluded he would be on the safe side by choosing a nice-looking *girl* for an associate—at least, when he goes out riding in that nice new buggy. You see, a girl would be quite *sure* to be free from any of these bad habits, and I am not a bit surprised if the boy finds her quite as agreeable, as a companion, as any of the young men. And now please do not understand me as casting reflections on the young men in the vicinity of Hudson, O.

Well, the boy has a farm adjoining his father's—or at least they two, father and son, are working at it together. The old fences have been removed, and new ones—that is, where any fence was needed—have taken their place. Old trees, big stones and stumps, and all useless rubbish, have been cleared away, and the potatoes are already coming up on this neglected waste. Now, wouldn't it be funny if those potatoes this very first year should conclude to behave themselves exactly as they do over on the father's farm, and bear great crops from the word go? I went through the fruit-garden where the raspberries, blackberries, and currants have not seen a hoe nor cultivator for the past six years. Mulching with straw does it all. Friend Terry thinks it would not require over two tons of straw per acre where this amount is put on every year. And this is all there is to it. The berry-patch always looks neat and tidy, always bears a prodigious crop, no matter how dry it is, and all the owner has to do is to pick the berries, each in its season.

Next I whirled into the beautiful town of Kent, Portage Co., O. A niece of mine has recently got married. Somebody said she was a little bit inclined to be homesick since living in Kent, and I must call on her. I found her husband in one of the drygoods stores. He marched me into the best room of one of the

pretty little cottages in Kent, and in a minute more I heard something like this:

"Millie, there is a man in the other room who wants to see you."

"Why, who is he, and what does he want?"

"I don't know. You will have to go in and talk with him."

"Oh bother!"

You see, the new wife was deep in the mysteries of bread-making—that is, her fingers were; but when she caught sight of the said "man," who insisted on seeing the lady of the house, she just threw up her hands and ejaculated, "Oh Uncle Amos! have you really got over here?"

I do not know whether any of the flour from her fingers got on my coat-collar or not; but there was danger of it. Perhaps I did look rather fresh and bright for an uncle toward 60 years old; for, about half a mile out of Kent, I found a pretty watering-trough, with a sort of annex at one end where the water poured over into a stone basin, where the dogs could drink with comfort. I first had a good drink of the soft water, then I washed my hands in the dog-trough, and some way or other my head got down under that cooling stream. If you have never ridden a wheel you can not imagine the delicious sensation. So you see my niece found me with my face washed and hair combed. After a little we took our wheels (this young couple are both provided with wheels) and ran around the town. You see, they did not have to hitch up nor even pay a cab-driver. I do not know how it happened, but my wheel turned up almost of itself in front of an ice-cream stand. Some beautiful strawberries out on the walk, right in front, must have had something to do with it. Millie ordered some strawberries while I was asking for ice-cream; and—did you ever try great luscious Bubach strawberries mashed up in ice-cream, when you were hot and thirsty? I began wondering who put such beautiful strawberries on the market so early in the season; and within an hour I was having an enthusiastic talk with the very man, my friend L. B. Pierce, of Tallmadge, O. No one who reads the agricultural papers of the United States needs an introduction to friend Pierce. About a year ago (see page 534, July 1, 1893) I told you about his strawberry-plantation out in the sandy woods, or on ground that had been woods but a short time before. New ground just reclaimed from the forest must have some special fitness for strawberries. It was Saturday, and friend Pierce was about as much astonished as any of us to find that there were just bushels and bushels of berries ready to pick. He had picked the afternoon before, and decided they would do nicely until Monday; but the beautiful warm weather, after such a protracted cold rainy spell, had done the business. We sampled all the new varieties, and tasted and tested, and tasted and tested, until we could not tell a good berry if we saw it. I insisted that friend Pierce should hunt up his pickers, and get those berries into market before night. But he had got his work laid out otherwise, and could not break up his plans. Perhaps he got as much money for his berries the Monday following, but I felt pretty sure he would not. Besides, some of them would be overripe. I said so much about it, that friend Pierce would have been *almost* excusable in saying he knew how to manage his own business. He did not know, however, and neither did *I*, that my own berry-patch at home was pretty much in the same predicament. Wait a little.

Then I visited my cousin, Wilbur Fenn. He has just got a new potato-planter, and I found him out in the fields, his group of bright pretty children all around him as usual. We had ever so much to talk about. The planter that he had just purchased does not miss hills. It leaves the soil fine and mellow underneath, and all around the potato, and it was just as accurate as planting by hand, or even more so. In fact, it *is* hand-planting. We went out into the field where the potatoes were coming up, and looked into the matter. A bright little girl ten years old was so much interested and animated in regard to the whole matter that I very soon discovered she did some of the dropping. She sat behind her papa, on the machine, and placed the pieces of potato in a series of little cups arranged in a circle. There were, perhaps, two dozen of them; and the dropper has only to keep a piece of potato in each of these two dozen cups as they revolve in a circle. It seems to me that the machine is a magnificent success. But something else impressed me during that visit, and it was this: There is no success with machinery, or any thing else in the line of progress and civilization, to be *compared* with the success that attends the man who has *his own children* so much interested in all his work on the farm that they find more delight in his companionship than anywhere else. You see, it was vacation time, so the children could be with their father from morning till night. The good mother told me, while we were eating dinner, that the little girl kept wishing and hoping that something would hinder the hired man from coming the day they were going to plant, so she could just ride on that machine all day and put the pieces of potato one by one into those magic cups. I began making some inquiry in regard to the family, as I looked from one bright little face to another. Cousin Fenn replied, "There are just five, and the *oldest* (the little girl who dropped the potatoes) sits there feeding the youngest some bread and milk." You see, she knew how to help her mamma by feeding the baby, just as well as she knew how to help make that complicated machine a success in planting potatoes. I told them I should miss my train unless I were in Akron by 3 o'clock; but I had to see the potatoes down cellar again. And, by the way, that big crop of Monroe Seedlings was planted the *last* week in June, instead of the first, as I have had it some of my writings. When I did get started I just made the Victor Flyer "fly," for sure; but I reached the station ten minutes too late. I did not care much, however, for I can pretty nearly keep up with a good many of our branch-railway trains. There was another train two hours later; and I decided that it would be much more to my liking to spend the two hours at Fairlawn, Summit Co. I found my young friend, C. W. Frank, enjoying himself among his crops, at high-pressure gardening. We got around to the strawberry-patch in a little while, and then I ate ever so many more. Just as I was getting ready to go over to the depot, his sister announced that supper was ready, and that I must have some "strawberries and cream." I told them that I should "get left" again, and it was Saturday night, and our boys doubtless needed me sadly to help them wind up their strawberry-picking of the day; but friend Frank said he had just been over to the station, and the agent said the train could not possibly come along sooner than 45 minutes; but just as we were half through our merriment with strawberries and cream, the whistle blew. I sprang for my wheel; but the boys had been riding, and the handle-bar was twisted. I was left again, and I want to tell you why I got left this time. The station agent has a clock worth about 50 cts., and, as a matter of course, he had to keep *sun time*. Every

time a passenger wants to know when the train leaves, he ciphers the difference out between sun time and standard time, and he generally makes a mistake, just as he did in my case. Never mind. I went back and finished my strawberries and visit. Then I rode 16 miles up and down some pretty hard sand-hills a part of the way, in just 96 minutes. I found the boys had picked the berries except those up by the windmill (see picture on page 517), which needed picking more than all the rest. They picked 11½ bushels, and sold them, so they did pretty well, any way; and as they did not see any thing of the boss at the time he agreed to come, they went home tired, and concluded that those great big berries on the clover sod, *a la* Terry, would have to stand it till Monday. So much for having a clock run by sun time.

Later.—June 23, while trying to ride uphill in the sand, I passed a buggy, and thought the faces looked familiar. It was friend Pierce and his wife. After a little talk I said:

"How much did you get for those strawberries that you left on the vines until the next Monday?"

"Oh! I got 10 cts. for those I got into the market Monday forenoon; but some of them that the boys took in Monday night brought only 6. I suppose they were pretty soft in consequence of being overripe."

There you see it, friends. Had the strawberries been picked Saturday afternoon, and rushed into the market Saturday evening, they would have brought almost twice as much money as they did Monday afternoon, when they were overripe and everybody else was pushing them into market. A little later, on the same morning, I saw a large crop of peas, just right to pick, between the rows of celery, at friend Atwood's celery farm, near Copley. He said he could not get around to it to market them that day, because it was Saturday, and he guessed they would have to wait till Monday, even if some of them were a little past their prime.

Moral.—When you strive with all your might, and leave no stone unturned to get a fine crop of any thing in advance of the market, do not let your enthusiasm ooze out at the last moment, when the most critical time of all comes to turn your product into cash.

Not to be ministered unto, but to minister.—MATT. 21:28.

From reports that are coming continually through the papers it would seem that there never was a time before when honest, unselfish men were needed so much as they are needed just now—especially men who can be intrusted to fill important offices. In fact, it would almost seem as if our republican form of government was in danger of going to pieces, even at this late day, unless men can be found who are free from avarice and greed. We pay large salaries to the police and officers of the law. In fact, they receive so many thousands that one would think that they ought to be satisfied; but recent developments in New York city seem to show that large numbers, not content with the salaries they are receiving, have been accepting bribes and blackmail to let transgressors go free. It is not alone that they were taking money that they had no right to; but while they are employed to enforce the laws, they make it their business to see that such laws are *not* enforced, and spend their time in aiding transgressors to *avoid* the law. Of course, they receive large pay for so doing. No one need tell us what the result of such work will be. Lookers-on conclude that the only thing to do is to scramble for the best, regardless of how they get it; and I am afraid there are a good many who love iniquity rather than righteousness, who are beginning to conclude there is not much to fear from the law or from the officers of the law, after all. I tell you, friends, it is a dangerous thing to let transgressors go, and *continue* to let them go, unpunished.

The mayor of the city of Chicago was recently shot down in cold blood. The man who shot him had not even been misused, so far as we can find out. The case was a very clear one. The culprit was tried, found guilty, and condemned to die. Now, I do not know why he did not die. I felt troubled and anxious when I heard that the execution was postponed. It may be that the man is *not* of sound mind. Then he is not *entirely* responsible for the act, as you and I would be; but the stories of crime which we read daily if we choose seem to indicate that there are *thousands* such as he. They are presuming on public sympathy, or something of that sort, and this incites them to push forward in this foolhardy way. I may be wrong; but I fear the *consequences* of letting such startling crimes go unpunished. It looks to me as if others of like spirit and disposition would be deterred from giving loose rein to their evil passions if this man had been promptly executed. I heard a man say that the reason why the mayor's assassin was not put to death was that foolish women sent him bouquets of flowers, and that he had so many sympathizers the governor suspended the sentence. Sympathy for a criminal is all right when shown in a proper way and to a proper extent; but any sort of sympathy that would seem to say to *this* man, and others like him, that he had done a good thing, is certainly a foolish and silly sort of sympathy.

The scenes of riot, bloodshed, and destruction of property, that are going on even while I write, are, I fear, largely the result of a foolish, misguided sympathy.

A few years ago a great complaint came up, to the effect that "farming did not pay." But this expression has gone by, and another is taking its place; if not in words, we see it in acts and in conduct. It is to the effect that *labor* does not pay—that is, ordinary labor with brain and muscle. In other words, a man can not, by honest day's work, stand any chance with the one who gets into office and accepts bribes, or gets a chance to pilfer from the government or from some railroad corporation, or to prove dishonest to his employer. There seems a pretty large and general disposition to think that strict honesty does *not* pay, or that honesty is *not* the best policy. This feeling is encouraged, very likely, because the laws are not enforced as they once were. And, finally, there has been a great longing—in fact, almost a clamoring—perhaps I should say a hungering and thirsting, for *honest men*—men who can be intrusted to any extent, with money belonging to others or to the government; and the old foolish claim, that there is not an honest man anywhere, has been repeated again and again, and expressions to the effect that "every man has his price." Where, oh! where are those who know and acknowledge that they are not their own—that they have been bought by Christ Jesus, and that they are laboring for him, and not for self—for him who uttered the

words of our text—not to be ministered unto, but to minister? Oh! I am sure there are thousands who will eventually *prove* themselves to be the salt of the earth; thousands who love God and who love humanity much *more* than they love money or houses and lands; thousands who can never be tempted; in fact, who would never find any enjoyment or comfort in that which is not honestly their own, earned by square and fair honest labor. I have been hoping and praying that these thousands would come to the relief of our country's needs. I know they must be roused and stirred up, sooner or later. They will consent to hold offices—I am sure they will. Yes, we shall ultimately have professing Christians for policemen; we shall have Christian men for sheriffs, and men who will show Christianity when they enforce the law. If there are people in our land who *must be* shot down because they will not yield to law and order, for God's sake let us have the shooting done by *Christian men*.

I am coming near to fault-finding in this paper of mine, dear friends; but I must speak of one more thing that indicates danger—yes, *terrible* danger. When the sheriffs of our own State of Ohio had exhausted all their means to preserve law and order, and were unable to stop the burning of bridges right on this very railroad that runs through our home—when these scenes of burning bridges and stopping trains had gone to such an extent that the ordinary officers of the law were *unable* to restrain the rioters, the State militia were called out. First the militia from one county were called, then from another county, then another, until it looked as if all the troops of the State would be needed. Well, the law-breakers yielded, I believe, to the militia; but while the militia were standing guard, and preserving order by their presence, what did they do? Well, I do not know what they did all along the line; but in one or two places they went into the *saloons* and drank *beer*. Yes, they played games, and put up a keg of beer as a stake for the winners. Some of you will laugh at this. Some of you will say, "Why, Mr. Root, you are not posted. Your Medina County, with some other counties near you, are an exception to the rest of the State. Down here toward the Ohio River, almost everybody drinks beer. Even members of the church do when they meet a friend." Well, perhaps I am not posted in regard to the whole State of Ohio; and yet I know something about these matters, after all; and I fear that law and order will never be permanently restored until more terrible things happen than we have seen yet.

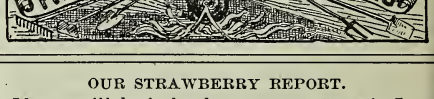
An officer of the law here in Medina County once arrested a man for disorderly conduct while drunk. As they had to ride together some distance to reach the jail, the officer got thirsty, went into a saloon and got a drink of beer, and generously (?) remembered his poor prisoner, and asked him to drink some beer too. What sort of law is that, and what sort of an officer was he who arrested a man, and put him in jail for the sin of intoxication, and then gave him a glass of intoxicants on the way to the jail? Is this kind of fashion of enforcing our laws either sense or reason?

Do some of you think that even A. I. Root himself is getting discouraged? No, I am not getting discouraged. The Bible says, "The way of the transgressor is hard;" and if we, a nation of people, become transgressors, or, at least, a great part of us become transgressors, we shall *find* our ways hard. They *ought* to be hard. It is better for us to have them hard. The wages of sin is death; and if we choose sin and selfishness, we should not be surprised when death confronts us. But there are other Bible promises. There is one that reads, "The meek shall inherit the earth." The meek, the honest, the quiet, the sober, the true, are ultimately to have charge; and the thing that troubles me just now is, that the meek are not found coming forward and accepting their inheritance.

Our people and our children, I fear, are getting the foolish and mistaken idea that the happiest man is the one who has many to wait upon him—the one who has lots of servants, and can sit at his ease, and put on lordly style. It is not true. It is a great blunder. The happiest people in this whole wide land are those who have learned the truth of our text—"not to be ministered unto, but to minister."

There are several bright features to look at in our land just now. One is, to see the number of people—especially young people—who are enjoying themselves riding wheels. There are a few who still sit in fine carriages, and who seem inclined to look down upon the wheelers; but they do not succeed very well. The boy or girl who rambles at will over hill and dale, enjoying these June days, is brighter and happier, and more to be envied—ever so much more—than one who rides in a carriage. The former helps himself; no sweaty overburdened horses are required to give him pleasure. He develops lungs and muscle and brain by helping himself. He laughs not only at fleet horses, but is in a measure independent of railway trains. No matter whether the train be late, or whether he fails to be on hand at the appointed time, he is independent. People talk about the hard times; but just see how many people — even quite young people — find the means, in some way, to purchase a wheel! The times are not so very hard, and the most of us can get all that is best for us to have, with a little exertion of brain and muscle. Oh I am so glad it is becoming fashionable—at least in certain lines—to cultivate muscle and lung capacity!

Now, dear friends, believe me when I tell you that getting ahead of your neighbors by questionable or dishonest means does *not* bring happiness. Why, such kind of pleasure or enjoyment is an empty bubble. It is a hollow fraud. The only *real* comfort or satisfaction, and the only thing that can be really called *enjoyment*, is in earning our bread by the sweat of our face, and rendering *unto Cæsar* the things that are Cæsar's, and *unto God* the things that are God's.



OUR STRAWBERRY REPORT.

If you will look back on page 517 again I can show you where we had our biggest strawberry yield. It was just back of that piece of rye at the right of the windmill. It is the highest ground on our ranch; and after turning under a piece of heavy clover we planted one row each of all our six varieties of strawberries, one year ago last spring. They took right hold, and grew in the mellow soil among the upturned clover roots, to my complete satisfaction. During the summer it was very little work to take care of them. We occasionally ran through one of those fine-toothed cultivators, and that was about all there was of it. Very few weeds came up. And, by the way, is not turning under a clover sod one of the very best plans to get a piece of ground free from weeds?

There was such little hoeing done in the patch that the expense did not seem to amount to much if any thing. You will remember that this is Terry's plan of raising strawberries as well as potatoes. In the fall we took some pains to place the runners so as to have the best matted row, without having the plants too close. This plot was intended to be entirely for fruit. We did not intend to sell plants from it at all; but during the great call for Jessie and Bubach last spring, we did, for accommodation, take quite a few plants from these two varieties. But, weren't the plants just beauties? It seemed too bad to take them up, and I thought one row of Jessies was thinned out so severely that it could hardly produce any kind of crop of fruit. Along in the middle of June, however, I began to realize we were going to have something wonderful up there over the rye. Some relatives visited me, and I wanted to show them the possibilities in the way of high-pressure gardening. They were greatly delighted in going over the grounds; but when they came to this show of fruit, their admiration knew no bounds. All present confessed not only that they had never seen any thing like it, but they did not know before that such a thing was possible. We ate berries, and talked, until we could eat no more. And now I want to talk to you something about varieties:

I should be very glad indeed to be able to submit to you some specimens of those grown up by the windmill; but you will have to take my word for it.

If the Jessie always behaved as it did up there, I should almost want to place it at the head of strawberries; and with its tremendous amount of bloom, from early till late, I think I will any way put it at the head of perfect-flowering varieties for fertilizing others. By the way, friend Pierce suggested the other day that we should use the word "pollenizer" instead of "fertilizer" in referring to strawberries. What do our horticultural professors say in regard to this use of the word? The strong points of the Jessie are, that it is exceedingly early, of large size, and that its red cheeks, reminding one of a ripe peach, make it bring the very highest price. The berry is so sweet when perfectly ripe that many like it just as well (or rather better) when it is white on one side; and if we pick them at this stage they are in advance of almost every thing else except the extra earlies. The Jessie holds on well to the last. Its disadvantages are, that if the soil is not just to its liking it gets feeble, and does not bear much fruit; and its blossoms are likely to be injured by frost.

The Parker Earle has behaved poorly during the present season. It did not stand the great amount of sunshine and the extremely hot days. Every plant on our premises set a very large amount of fruit—perhaps the largest amount that I ever saw on any variety of strawberries. Only the first ripened fully matured, and those at the close of the season were deficient in size and flavor. At the Ohio Experiment Station, which I visited June 21, they told me that, if the ground were made exceedingly rich, and moisture supplied when rains were lacking, it would perfect all its fruits. That may be true. When I visited Matthew Crawford, at Cuyahoga Falls, Summit Co., O., June 23, I found his Parker Earles behaving just as mine do.

The Bubach sustains its good reputation, but it does not give us berries quite as early as the Jessie, nor quite so late, and it must be placed near a pollenizer, for it is imperfect.

The Haverland fully sustains its good reputation as a tremendous bearer. I believe the Haverland has produced more bushels of berries, for us, than any other strawberry we ever tried. Its faults are, that the berry is watery, and therefore too soft for shipment. It is also generally considered rather insipid in flavor compared to others. But with an abundance of sunshine, some of the berries have colored up and proved to be of a *very fine* flavor, where the plants do not stand too thickly. Several times, when thirsty, and it was quite a piece to the spring, I have gone to a dense bed of Haverlands and slaked my thirst with great luscious berries picked out deep down among the leaves, where they were still cool from the dews of the night. The Haverland is all right if you can hand it to your customers the same afternoon or the same forenoon that they are picked. You had better not try to keep it over night unless the nights are very cool. The Haverland gives us berries moderately early, and they hold out well until the last.

The Sterling, we have decided to drop—not because we have any thing against it, so much as that another well-known berry has pretty nearly all its good qualities. I refer to the Warfield. We once had it in our catalog, and dropped it; but this year it has given us such an abundance of beautiful dark-red berries, with its sprightly acid flavor, that I have before spoken of, that I am glad to call it back. By the way, just go out in the morning to a bed of Warfields; and as the rising sun sparkles among the dewdrops on the strawberry leaves, just watch the effect as these rays strike the rich ruby-colored fruit nestling among the green leaves. At one time in my life I was a jeweler, and I used to admire garnet clusters. Well, these Warfield strawberries are veritable clusters of garnet. Friend Terry said he did not know any thing about wine; but he felt sure he should find the juice of these well-ripened berries more luscious to him than the choicest wines that the vine ever produced. And there is not any *danger* of looking upon these berries "when they are red;" no, there is not any danger, either, in eating them to your heart's content, four or five times a day, or even more; for if any danger ever lurked there, I should not be as well and strong as I am while the boys are picking the last of our strawberries this 25th day of June.

Now, there is one more berry that we once had in our list, and dropped. It has done so grandly this season that I really feel grateful to the man who gave it to the world. It is the Edgar Queen. We had two rows of them, planted about three years ago. I dropped them, as I told you, because they were of such a bad shape; but it was in consequence of my stupidity in not providing an adequate number of pollenizing plants near by. Well, this year these same two rows have again given us bushels and bushels of tremendous great berries, and finely colored, and rather firm for handling and shipping. When I am in a hurry, and feel hungry for strawberries, I just start for the Edgar Queen, because these great whoppers, that are found in such abundance everywhere, satisfy my appetite in a very little time. Sometimes I start off with my hands full, and eat them on the way.

Now, these are the strawberries I have selected to offer you during the coming months. Oh, yes! I should not forget the Timbrell. I did not let very many plants produce berries at our place, but pronounced them very satisfactory; but at the Experiment Station, both W. J. and E. C. Green declared that people would object to them because they were fully ripe before they were fully red all over. Well, this would not be a very great objection, for our old friend the Jessie, as well as the Sharpless, is often marketed with one side almost entirely white. But

the Timbrell has a queer way of showing a *mottled* white and red on one side, when the berry is not perfectly ripe. This may be a small fault, but it is a fault *after* all. The Shaffer's Colossal raspberry has had to take a back seat just because of its mottled appearance. Some of our customers were afraid our spraying solution had got on to the berries. Many of you have doubtless heard of or seen advertised the Marshall strawberry, because the plants have been held at the enormous price of $10.00 a dozen. I examined the dozen plants at full bearing, at our Experiment Station. The foliage was beautiful, and of immense luxuriance. The berries were large, of good shape, nice color, fine flavor, firm enough to handle well, and it almost seemed as if the berry were without fault. Friend Green smilingly remarked, that, if there were *enough* of them, it would be hard to find its equal. Like the beautiful Gandy, it seems to be a shy bearer. At Matthew Crawford's I found it just the same. I suggested to friend Green that we always get a large price for the Gandies.

"Yes, Mr. Root, that is true; but you sit down and figure it out, comparing your Gandies with other good varieties, and you will find that you will have to get not only twice as much per quart, but perhaps *three times*, to produce the Gandies profitably."

This is a thing we should consider, friends. Now, there are a few other varieties that promise very fairly; but I have not yet decided to add them to our list of six. One variety which I have tested, and which seems very desirable, is the Muskingum; also the Beverly and the Iowa Beauty. We may hear from these later.

The managers of our Ohio Experiment Station have tested almost if not quite every new strawberry advertised, no matter what the price. Many of them—in fact, the greater part—they find have nothing to recommend them over other well-known varieties. For instance, the Shuckless, which has been so widely advertised, is not any more shuckless than the Warfield, and ever so many other kinds. When the Warfield is well ripened, you can strip off handfuls of berries, having them leave the stem like raspberries. But few purchasers, I think, will want his berries in that way, after trying it. I tried pulling off berries from a row of Shuckless, and then from a row of Warfield; and I never should have guessed that the Shuckless berries were shuckless unless the label or somebody had called my attention to it.

STOWELL'S EVERGREEN SWEET CORN.

Since the communication on page 519 of our last issue, we have received the following:

Mr. Root:—You give an account of onion-plants in "High-pressure Gardening." I thought I was doing a big thing on sweet-potato plants. I have sold 45,000 plants at 25c per 100, on a bed 100 feet long and 6 wide. I have lots of plants yet. This bed was full of onions before sweet potatoes. I also had quite a trade on onion-plants, tomato, cabbage, and so on. Our strawberries are about all gone. We have picked 175 bushels, and one picking for Saturday yet.

The Stowell's evergreen sweet corn I got last year did boss. It all grew. Send me half a bushel more of the same kind.

J. W. NICODEMUS.

Newcomerstown, O., June 21.

Of course, the above does not settle the question; but it shows that the same lot of corn grew well in some localities.

HONEY WANTED.

We should like to hear from our readers near by who have choice comb or extracted honey to offer, stating how much you have, and the price. We have a fair trade in honey, and are practically sold out. We have some 200 lbs. of last year's buckwheat comb honey, which we will close out at 10c per lb.; have also some choice white-sage extracted in 60-lb. cans, 2 in a case, at 8c. We have secured no new honey yet, though we hope to have it within a week or two. We wish to hear from those having it for sale; will pay all we can afford to for choice honey, consistent with present condition of honey market.

MASON JARS.

To those of our customers who can not do better, we are prepared to furnish Mason jars at the following prices until further notice: We have pints, quarts, and half-gallons, all of which take the same size caps. Pint jars, per box of 1 doz., 60c; per box of 6 doz., $3.25; quart jars, per box of 1 doz., 65c; per box of 8 dozen, $4.50; half-gal. jars, per box of 1 doz., 85c; per box of 6 dozen, $4.75. There is probably no glass jar more universally used for canning fruits, etc., than the Mason, and many use it for selling extracted honey, because, when emptied, it is still of use.

NO. 25 JAR.

For a smaller glass jar than the Mason, one to hold a pound of honey, and self-seal, there is nothing that we find quite so good as the No. 25 jar shown in our catalog. Our sales of this jar, and the testimonials from those who have used it, confirm our opinion. It is of clear glass, with glass cover and rubber ring, secured by a nickel-plated rim which screws on securely, sealing the jar. We have them packed in two ways. For those who wish to ship or store honey in the jars, nothing is better than the partitioned case holding two dozen of the jars. This may be shipped with the jars filled or empty, without any additional packing.

No. 25 jar, 2 dozen in case, $1.40; 6 cases, $8.00; 30 cases or more, at $1.25 a case.

No. 25 jar, 1 gross in a bbl., $7.00.

Lots of 5 bbls. or more, $6.50 per bbl.

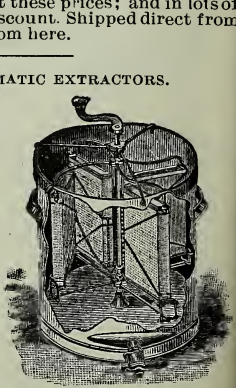
POUDER SQUARE JARS

Walter S. Pouder, of Indianapolis, has gotten out some new square flint jars, made by natural gas, and put up 100 in a crate. They are the same shape and size as the Muth jars, without the straw hive on the side, but in its place, "Warranted Pure Honey." The 5 and 8 oz. jars require corks same size. Prices as follows:

5-oz. jars, no corks, per 100,	$1.75;	corks, per 100,	20c.
8-oz. " " " " "	2.40;	" " "	20c.
1-lb. " " " " "	3.10;	" " "	25c.

We can supply them at these prices; and in lots of 500 or more, 5 per cent discount. Shipped direct from Indianapolis, Ind., or from here.

STANLEY AUTOMATIC EXTRACTORS.



We still have left of the Stanley Automatic extractors 3 four-frame machines. We got these with other stock when we bought out E. R. Newcomb some three years ago. We had originally some 20 or more machines, and the stock is now worked down to 3 four-frame. The regular price at which these four-frame machines sold was $20, without gear. We offer these, to close out, at $10; or for $14 we will put on the bevel gear used on our Cowan machines, or one of that pattern. This machine, with gear, used to sell for $28.00. Remember, we can not